Gateway

Gateway

**7250R Server
System Manual**

Contents

Preface

Conventions used in this manual

Throughout this manual, you will see the following conventions:

Convention	Description
ENTER	Keyboard key names are printed in small capitals.
CTRL+ALT+DEL	A plus sign means to press the keys at the same time.
Setup	Commands to be entered, options to select, and messages that appear on your monitor are printed in bold.
User's Guide	Names of publications are printed in italic.
Viewpoint	All references to front, rear, left, or right on the server are based on the server being in a normal, upright position, as viewed from the front.

Important	A note labeled important informs you of special circumstances.
Caution	A caution warns you of possible damage to equipment or loss of data.
Warning	A warning indicates the possibility of personal injury.

Getting additional information

Log on to the Gateway technical support area at www.gatewayatwork.com to find information about your system or other Gateway products. Some types of information you can access are:

- Hardware driver and program updates
- Technical tips
- Service agreement information
- Technical documents and component information
- Frequently asked questions (FAQs)
- Documentation for peripherals or optional components
- Online technical support

System Features

Standard features

- As many as two Intel® Pentium III processors with 100 MHz Front Side Bus (FSB) in Slot 1 processor sockets

- Four Dual Inline Memory Module (DIMM) sockets, that support up to 2.0 GB of PC100 Synchronous Dynamic Random Access Memory (SDRAM).

- Intel 440GX chipset

- Integrated Intel 82559 network controller providing 10/100 LAN support

- Integrated Super Video Graphics Array (SVGA) video support with 2 MB of Synchronous Graphics RAM (SGRAM)

- Two PCI slots on a riser card (additional slots on the system board are not usable in this chassis)

- ATX form factor system board

- One 3.5 inch 1.44 MB diskette drive, one slim-line CD drive, and at least one hard drive

- Integrated voltage regulator modules (VRMs) for both processors

- Integrated Adaptec AIC 7896 dual function controller providing both low-voltage differential (LVD) Ultra2 small computer systems interface (SCSI) and Ultra Wide single-ended (SE) SCSI support

- Four drive hot-plug cage

- Keyboard port (PS/2), mouse port (PS/2), two serial ports, parallel port, video port, RJ-45 LAN port, and two Universal Serial Bus (USB) ports

Front panel

Diskette drive   Control Panel   Hot-plug drive bay

Slimline CD drive   Hot-plug drives
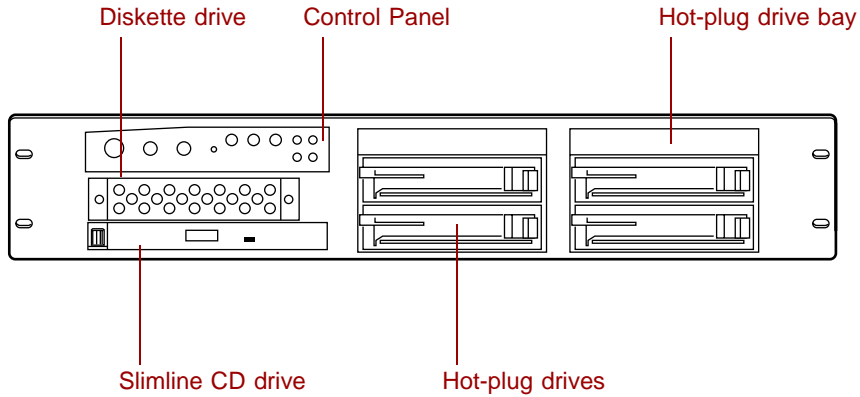
Diskette drive writes to and reads from 3.5-inch, 1.44 MB diskettes.

Control panel contains the LED indicators and the power, reset, and sleep buttons that control the server.

Hot-plug drive bay includes up to four hot-swappable hot-plug drives connected to a hot-plug backplane. The drive bays support 1.0-inch drives.

Hot plug drives plug into the hot-plug drive bay.

Slimline CD drive plays data or audio CDs

Back panel

Mouse port   Network port

Parallel   Video port   Power connector
port

Keyboard   Serial   Expansion
port   port A   card slots

Serial port B   USB ports   Power supply fault LED
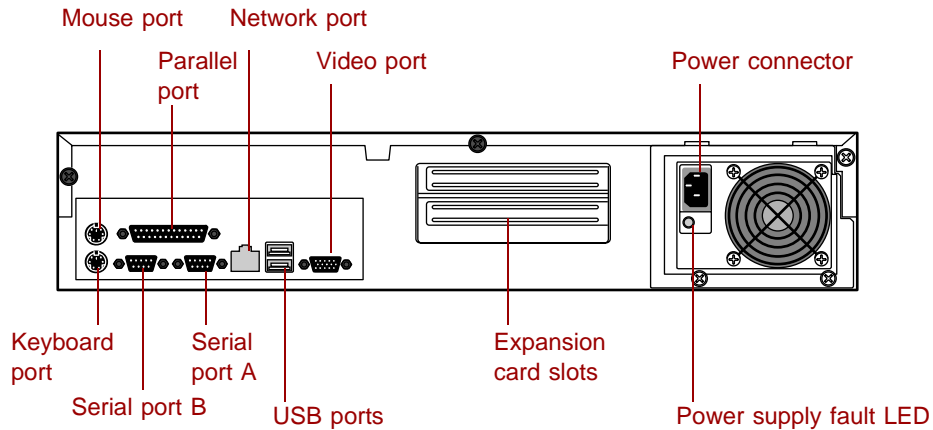
Mouse port connects a PS/2-compatible mouse.

Parallel port connects a printer or other parallel device.

Network port lets you connect to a network. The adjacent indicator LEDs show LAN activity (yellow) and 100 Mbit speed (green).

Video port connects the first (or only) monitor interface cable. The video controller is integrated in the system board.

Power connector connects the server power cord. The other end of the power cord plugs into an AC outlet or power strip.

Power supply fault LED lights when the power supply experiences a fault condition.

Expansion card slots (2) let you install as many as two 32-bit, 33 MHz PCI expansion cards.

USB ports connect external Plug-and-Play devices, such as printers and pointing devices, that are automatically configured when they are plugged into the server through one of these ports. USB keyboards and mice are not supported.

Serial ports (2) connect to serial devices.

Keyboard port connects a PS/2-compatible keyboard.

Interior of system
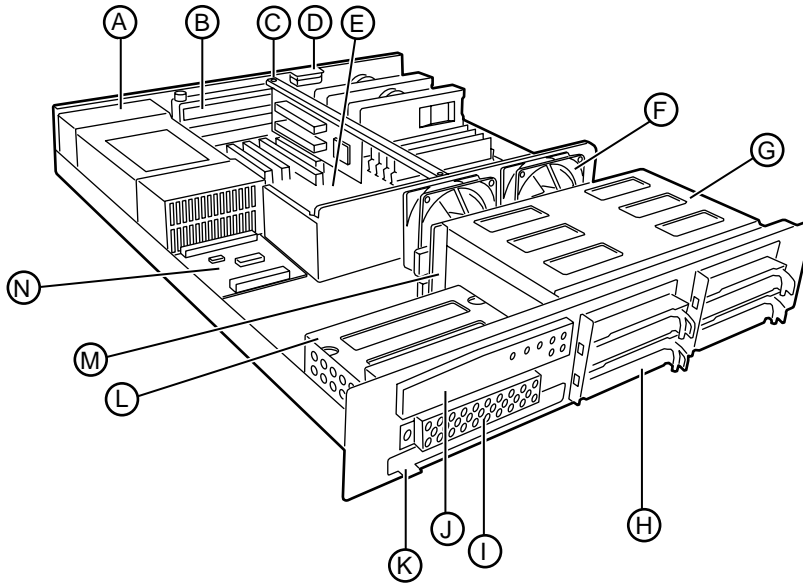
A **Power supply** provides power to the system components.

B **Expansion slot covers** cover the spaces where you can install as many as two PCI expansion cards.

C **Riser card** supports as many as two PCI expansion cards.

D **Intrusion switch** logs a flag when the cover is removed to help prevent unauthorized access to the chassis.

E **System board** see "System board" on page 6.

F **Fan assembly fans** provide cooling for the system.

G **Hot-plug bays** support up to four 1-inch high 3.25-inch SCA SCSI hard drives. Empty drive bays contain empty carriers to control airflow and EMC characteristics.

H **Hot-plug drives** plug into the hot-plug drive bays.

I **Diskette drive bay** supports the legacy 3.5-inch diskette drive.

J **Control panel** supports the indicator LEDs and the buttons to control the Server operation.

K **Slimline CD drive** plays data or audio CDs.

L **Secondary drive bay assembly** supports the slimline CD drive and the legacy diskette drive.

M **Hot-plug backplane** provides the control for the hot-plug drives.

N **Power distribution board** controls power distribution from the power supply to the internal components.

System board
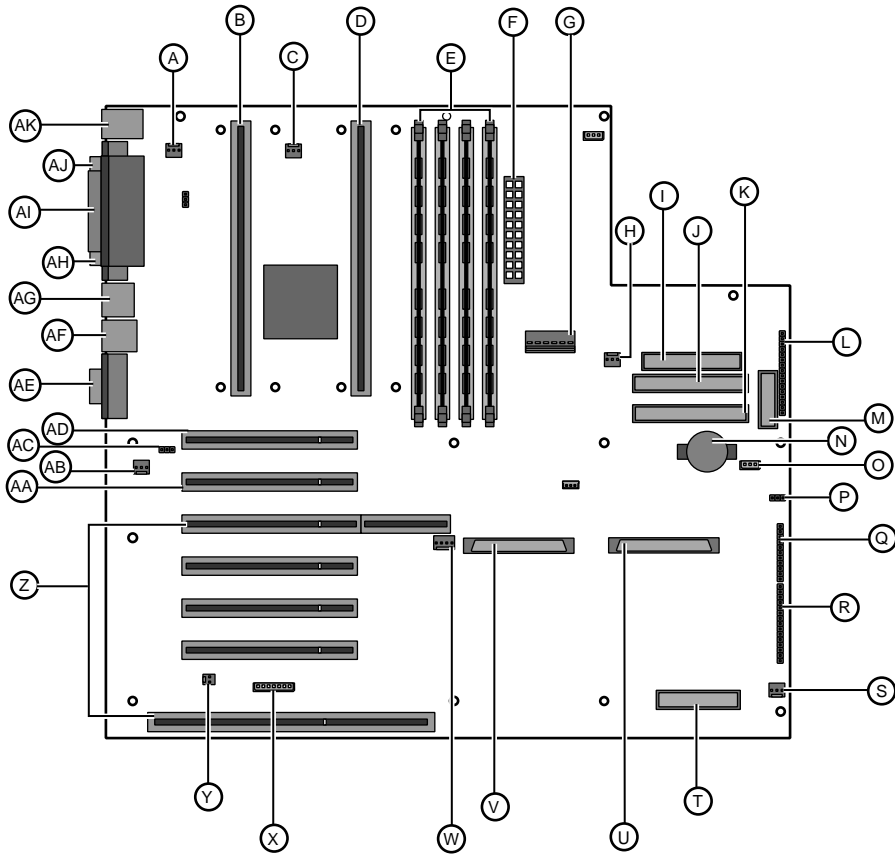
A Secondary processor fan connector

B Secondary processor connector

C Primary processor fan connector

D Primary processor connector

E DIMM slots (4)

F Main power connector, 24-pin

G ATX auxiliary power connector, 6-pin

H Fan connector

I Diskette drive connector

J	Primary IDE connector
K	Secondary IDE connector
L	ATX front panel connector
M	Front panel connector, 16-pin
N	Battery
O	Isolated server management (ISOL) intelligent management bus (IMB) connector (not used)
P	Jumper J4J2 (BMC boot block write enable)
Q	Jumper block (jumper J3J1)
R	Jumper block (jumper J2J1)
S	Fan connector (hot-plug drive bay fan)
T	Server monitor module (SMM) feature connector
U	Ultra wide SCSI connector
V	Ultra2 SCSI connector
W	Hard drive LED connector
X	Intelligent chassis management bus (ICMB) connector (not used)
Y	Chassis intrusion connector
Z	Expansion card connectors (not used)
AA	Fan connector (not used)
AB	Wake on LAN (WOL) jumper
AC	PCI connector used for riser card
AD	Expansion card connector (not used)
AE	Video connector
AF	Dual USB connectors
AG	RJ-45 Ethernet LAN connector and LEDs
AH	Serial Port A
AI	Parallel port
AJ	Serial port B
AK	Stacked keyboard and mouse ports

Hot-plug backplane

SCSI connector   Power connector

Jumper block

Front panel connector

SCSI connector connects the SCSI cable from the RAID controller.

Power connector connects the power cable from the power supply.

Front panel connector carries signals from the backplane to the front panel.

Front of the hot-plug backplane board

SCSI ID 0   SCSI ID 1

SCSI ID 2   SCSI ID 3
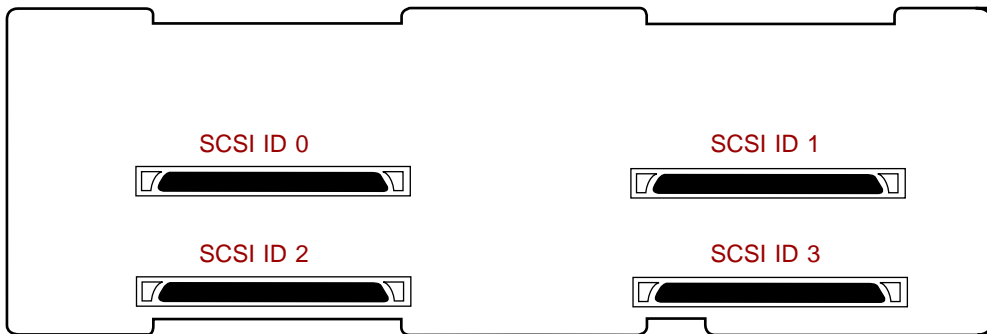
SCA SCSI drive connectors (4) connect the four SCA SCSI drives. Install drives in increasing order of SCSI ID.

Front panel board

The front panel board supports the LEDs and buttons accessible from the front panel. The buttons and LEDs on the front panel board are shown and described below.
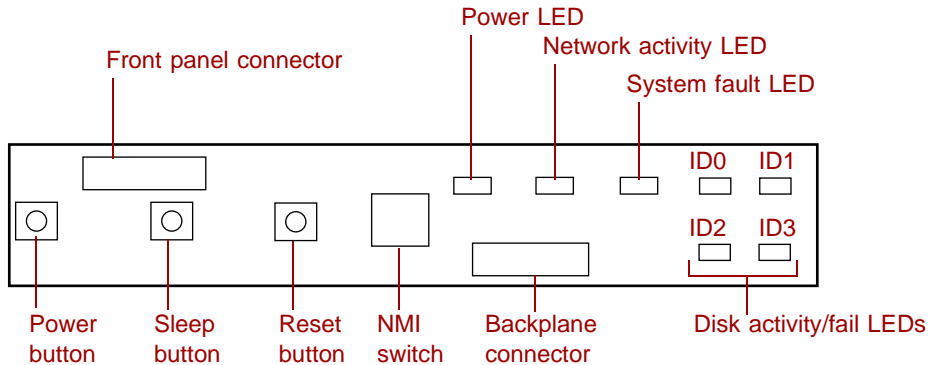
Front panel connector connects the controls on the front panel with the system board.

Power LED glows green whenever the system is turned on. The LED also flashes when the system is in sleep mode.

Network activity LED lights whenever there is activity on the network.

System fault LED flashes whenever the system logs a failure.

Disk activity LEDs glow green whenever the hard disk is actively reading or writing data and glow amber if the disk fails.

Backplane connector carries signals from the hot-plug backplane to the control panel.

NMI switch allows a technician servicing the server to generate a non-maskable interrupt (NMI) to help debug server errors.

Reset button lets you reset the server if it has become nonresponsive.

Sleep button lets you put the server into sleep mode to reduce power consumption.

Power button turns the server on and off.

Riser card

The riser card includes a PCI bridge to support the two PCI expansion slots through the PCI expansion slot on the system board.

PCI Slot 2

PCI Slot 1
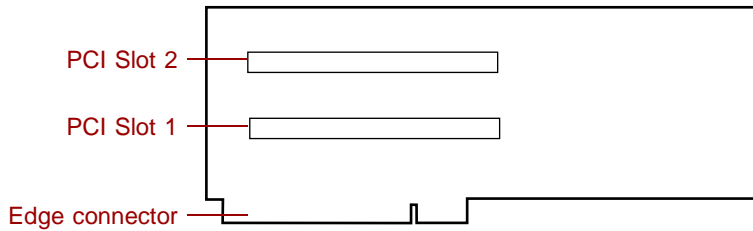
Edge connector

PCI expansion slots provide support for as many as two 32-bit, 33MHz PCI expansion cards. Slot 1 is the lower slot and slot 2 is the upper slot.

Edge connector connects to the PCI slot closest to the processors.

System Setup

2

Setting up the server

Use the instructions on the quick guide poster that came with the server to assemble the server.

You can prepare a safer working environment before assembling the server by following these guidelines:

■ Obtain an adequately rated uninterruptible power supply (UPS). A UPS protects against AC line spikes, power interruptions, and other power fluctuations that may damage the server.

■ Protect the server from extreme temperature and humidity. Do not expose it to direct sunlight, heater ducts, or other heat-generating objects.

■ Keep the server away from equipment that generates magnetic fields, such as unshielded stereo speakers. Even a telephone placed too close to the server may cause interference.

■ Plug the server into a wall outlet, power strip, or uninterruptible power supply (UPS).

Important	Keep the boxes and packing material. If you need to send the server to Gateway for repairs, you must use the original packaging or your warranty may be voided.

Starting the server

Before you start the server for the first time, make sure:

■ If the power supply is autosensing, it will not have a voltagte selection switch and it automatically determines the voltage of the incoming power source.

■ All cables are firmly connected to the proper ports on the back panel of the server.

Caution	Electricity can flow from connected peripherals into the system causing a shock. Make sure the server and peripherals are turned off and unplugged from the power outlet when you connect peripherals to the server.

■ The server and monitor are plugged into an AC outlet, power strip, or UPS and that the power strip or UPS is turned on.

➲ To start the system:

1 If you have connected the system components to a power strip or UPS, make sure all the system components are turned off, then turn on the power strip or UPS.

2 Turn on the monitor.

3 Turn on the server. The light-emitting diode (LED) on the control panel is on when the power is on.

4 Turn on any other components connected to the server, such as speakers, a printer, or a scanner.

If nothing happens when you turn on the system:

■ Make sure that the power cables are securely plugged in and that the power strip or UPS (if you are using one) is plugged in and turned on.

■ Make sure the monitor is connected to the server, plugged into the power strip, AC outlet, or UPS, and turned on. You may also need to adjust the brightness and contrast controls on the monitor.

Understanding the Power-On Self-Test

When you turn on your server, the power-on self-test (POST) routine checks the system memory and components. To see this information on the screen, press ESC during POST. Press SPACEBAR to bypass the remaining memory count.

The system displays an error message if POST finds any problems. Write down any error messages that you see. If you continue to have problems, these error messages may help you or Gateway technical support diagnose the cause.

Setting up the operating system

The first time you start the server, the operating system takes a few minutes to set up.

Refer to your operating system documentation for specific questions regarding the operating system.

➲ To complete the operating system setup:

1 After the server starts, the start-up wizard opens. Click **Next**.

2 Type the requested information in the appropriate text boxes. When you have finished typing the information, click **Next**.

3 Continue following the instructions and selecting options in the start-up wizard dialog boxes, clicking **Next** to move through the dialog boxes, until the wizard tells you to restart your server.

   If you need to return to the previous dialog box to change any of your entries, click **Back**.

4 Restart the server. The setup is complete.

| **Important** | For all operating systems, refer to the appropriate operating system software manual for specific instructions. |

Turning off the server

Every time you turn off the server, shut down the operating system first. You may lose data if you do not follow the proper procedure.

➲ To turn off the server in Windows NT:

1 Click **Start**, then select **Shut down the computer?**, then **Shut Down**.

2 Click **OK**. The operating system shuts down. When you see a message saying **It is now safe to turn off your computer**, turn off the server by pressing the power button.

3 Turn off the monitor and peripherals.

Caution	When you turn the server off, some electric current still flows through it. Before opening the server case or connecting or removing any peripherals, turn off the server, then unplug the power cord.

Important	For other operating systems, such as Windows 2000 or Novell Netware, refer to the appropriate operating system software manual for specific instructions.

Resetting the server

If your server does not respond to keyboard or mouse input, you may have to close programs that are not responding. If closing unresponsive programs does not restore your server to normal operation, you may have to reset the system.

⮑ To close unresponsive programs and reset the server in Windows NT:

1 Press CTRL+ALT+DEL. A window opens that lets you close a program that is not responding.

2 Click **Task Manager**, then select the program that is not responding.

3 Close the program by clicking **End Task**.

4 If the server does not respond, press the reset button to restart the server.

As a part of the regular startup process, a program to check the disk status runs automatically. When the checks are finished, Windows starts.

Important	For other operating systems, such as Windows 2000 or Novell Netware, refer to the appropriate operating system software manual for specific instructions.

3

Case Access

Preventing static electricity discharge

Before opening the server case, follow these precautions to prevent damage from static electricity. When opening your server case, always perform the following procedure.

Caution ⚠	Static electricity can permanently damage electronic components in your server. Prevent electrostatic damage to your server by following static electricity precautions every time you open your server case.

➲ **To prevent static electricity discharge:**

1 Turn off the server power.

2 Touch a bare metal surface on the back of the server.

3 Unplug all power cords from AC outlets and disconnect the modem cable (if installed).

Also follow these static electricity precautions:

- Avoid static-causing surfaces such as plastic and packing foam in your work area.

- Remove the parts from their antistatic bags or containers only when you are ready to use them. Do not lay parts on the outside of an antistatic bag or container because only the inside provides antistatic protection.

- Always hold cards by the edges and their metal mounting brackets. Avoid touching components on the cards and the edge connectors that connect to expansion slots. Never slide cards or other parts over any surface.

Opening the case

The only components that are accessible from the outside of the chassis are the front panel indicator lights. To access any of the removable media drives, the hot-plug drives, or the front panel buttons you must open the bezel. To work on the internal components of the server, you must open the chassis.

Because the components inside the server are extremely sensitive to static electricity, make sure you follow the precautions at the beginning of this chapter to avoid static electricity damage.

Only qualified personnel should open the system for maintenance. If you are qualified to maintain the system yourself, make sure you are properly grounded before opening the system chassis.

Opening the bezel

The bezel covers the removable media drives, the hot-plug drives, and the front panel controls. To access these components, you must open the bezel.

➲ To open the bezel:

1 Grip the bezel door and pull the door straight out away from the chassis.

2 Swing the door downward on its hinges so that it rests below the front of the system.

Removing the top panel

The top panel provides access to all of the internal components of the server.

➲ To remove the top panel:

1 Turn off the server and disconnect all power cords.

2 Observe all safety and static electricity precautions, see "Preventing static electricity discharge" on page 17.

3 Remove the three screws from the top edge of the back panel.
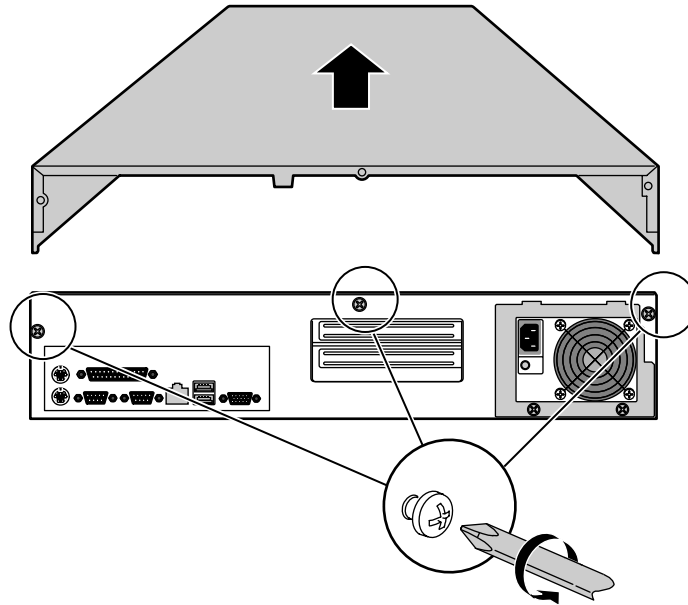
4 Slide the top panel slightly to the back, disengaging the top edge of the panel from the top of the front panel.

5 Lift the panel out and away from the chassis.

Closing the case

Close the chassis as soon as you finish installing or removing components so that dust and dirt do not collect inside the server.

Replacing the top panel

You must replace the top panel before you can operate the server. If you do not, a system intrusion event is logged by the system management hardware. Be careful not to pinch any cables in the panel as you replace it.

➲ To replace the top panel:

1 Place the top panel on the top of the chassis approximately 3/4-inch back from the front of the server.

2 Slide the panel toward the front of the chassis 3/4-inch, securing it in place. The tabs on the front of the top panel slide under the lip of the front panel.

3 Replace the screws you removed earlier.

Closing the bezel

Close the bezel to prevent accidental or unauthorized access to the server controls, hot-plug drives, and removable media drives. To close the bezel, swing the bezel up and press it firmly into place.

Replacing and Adding Internal Devices

4

Drives

There are several types of drives and similar devices that can be installed in the server.

Preparing to replace or add a drive

One 3.5-inch diskette drive, at least one 1-inch high 3.5-inch hot-plug hard drive, and one slimline CD drive are included with the server. You can add up to three additional 3.5-inch hot-plug drives for a total of four hot-plug drives.

As you prepare to install drives, keep the following in mind:

- If you remove a drive, place it in an antistatic bag or container.

- Before you install a drive, see the drive documentation for information on configuring the drive, setting any jumpers on the drive, and attaching cables to the drive.

- If you are installing a drive that uses an add-in controller, install the expansion card before you install the drive.

- You may need to configure the drives you install using the BIOS Setup utility or the SCSISelect utility. Press F2 at start up to open the BIOS Setup utility or press CTRL+A to enter the SCSISelect utility.

Drive cabling information

The system includes three different types of drive cables. Each drive cable is clearly labeled, indicating the cable type and showing which end to connect to the appropriate connector on the system board and which end to connect to the drive.

- Use the diskette drive connector cable to connect the diskette drive.

- Use the standard IDE connector cable to connect the CD drive.

- Use the SCSI LVD cable to connect the hot-plug backplane to the integrated SCSI controller on the system board.

Replacing the diskette drive

The diskette drive is immediately below the control panel.

➲ To replace the diskette drive:

1 Turn off the system and disconnect the power cord and all other external peripheral devices.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Remove the power and data cables from the back of the drive, noting their locations and orientations. (You will reconnect these cables after you install the new drive.)

4 Remove the diskette drive tray by removing the two screws from the front panel.
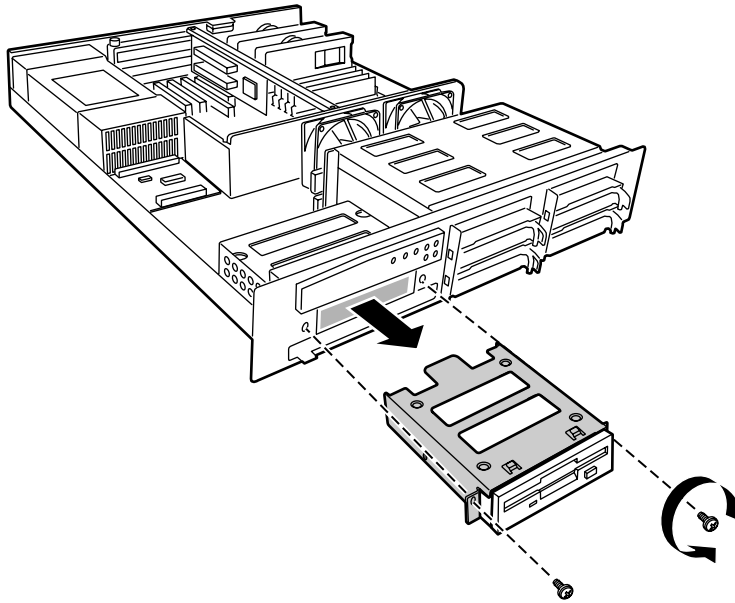
5 Pull the tray out of the chassis.

6 Remove the drive from the tray by removing the four screws that secure the drive to the tray.
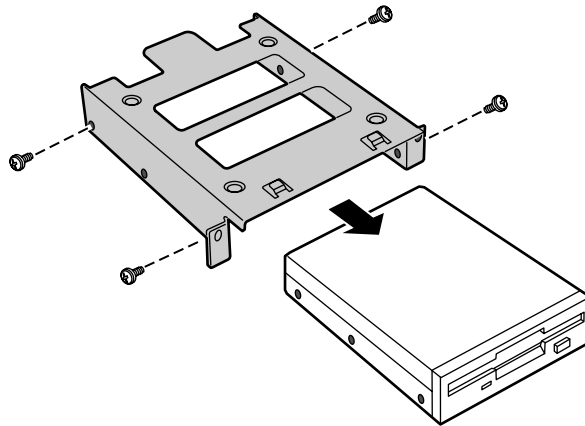
7 If necessary, set any jumpers on the drive. (See your drive documentation for proper drive jumper settings and cable orientation.)

8 Attach the tray to the new drive by reinstalling the screws you removed in Step 6.

9 Replace the tray in the chassis using the screws you removed in Step 4 to secure the tray in position.

10 Connect the power and data cables, making sure the cables are in their original positions.

11 Close the case. (See "Closing the case" on page 20.)

12 Reconnect the power cord and all other external peripheral devices, then turn on the system.

Replacing a hot-plug drive

The hot-plug drives are located at right side of the front panel as you face the system. The hot-plug bay supports as many as four 1-inch high 3.5-inch SCSI hard drives.

The hot-plug drives are assigned SCSI ID numbers by the hot-plug backplane with the drive in the upper left corner of the hot-plug bay assigned SCSI ID 0. The backplane assigns SCSI IDs to the other drives in order up to SCSI ID 3 in the lower right corner of the hot-plug bay. See "Hot-plug backplane" on page 8 for the locations of the drives by SCSI ID number.

Important	Gateway tests and verifies the operation and compatibility of the drives we sell. Additional or replacement drives must conform to Gateway standards, especially in a RAID or mission-critical environment.

Install the first drive in the upper left corner, then install drives in increasing order by SCSI ID number thereafter.

➲ To replace a failed drive:

1 Before you remove the failed drive, use the appropriate software and utilities installed on the system to stop all activity on the failed drive. Instructions for using the software are provided by the software manufacturer.

2 Use the utilities or look at the drive indicator LEDs on the front panel to determine which drive needs to be replaced.

3 Remove the drive from the drive bay by unclipping the retention lever and rotating the lever out away from the front of the system.
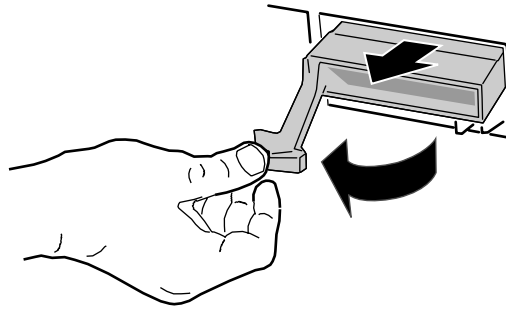
4 Continue pulling outward until the drive is entirely out of the system, holding the top edge of the carrier to make sure the drive exits the chassis smoothly.

5 Remove the four screws that secure the drive to the carrier, then remove the drive.
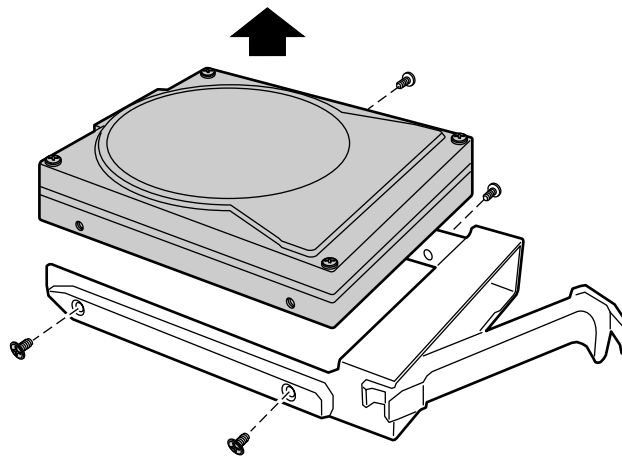
6 Install the new drive in the carrier using the four screws you removed in Step 5.

7 Align the drive rails with the slots at the sides of the drive bay. Leave the retention lever in the open position.

8 Push the drive all of the way into the drive bay until the retention lever starts to close because of contact with the front of the chassis. Make sure the hooks on the side of the retention lever latch to the side of the drive bay and firmly close the lever.

9 Run any necessary utilities to setup the new drive. See the utility software documentation for details.

Adding a hot-plug drive

The hot-plug drives are located at right side of the front panel as you face the system. The hot-plug bay supports as many as four 1-inch high 3.5-inch SCSI hard drives.

The hot-plug drives are assigned SCSI ID numbers by the hot-plug backplane with the drive in the upper left corner of the hot-plug bay assigned SCSI ID 0. The backplane assigns SCSI IDs to the other drives in order up to SCSI ID 3 in the lower right corner of the hot-plug bay. See "Hot-plug backplane" on page 8 for the locations of the drives by SCSI ID number.

| **Important**	Gateway tests and verifies the operation and compatibility of the drives we sell. Additional or replacement drives must conform to Gateway standards, especially in a RAID or mission-critical environment.

Install the first drive in the upper left corner, then install drives in increasing order by SCSI ID number thereafter.

➲ To install an additional hot-plug drive:

1 Remove the drive carrier from the drive bay by unclipping the retention lever and rotating the lever out away from the front of the system.
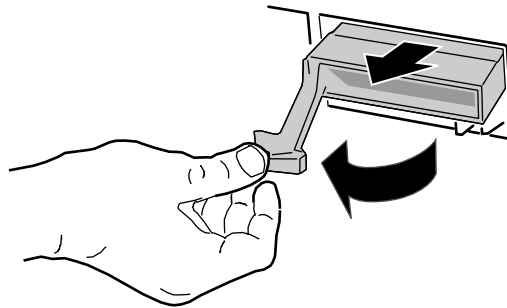
2 Continue pulling outward until the drive carrier is entirely out of the system.

3 Remove the four screws that secure the air baffles to the carrier, then remove the air baffles.
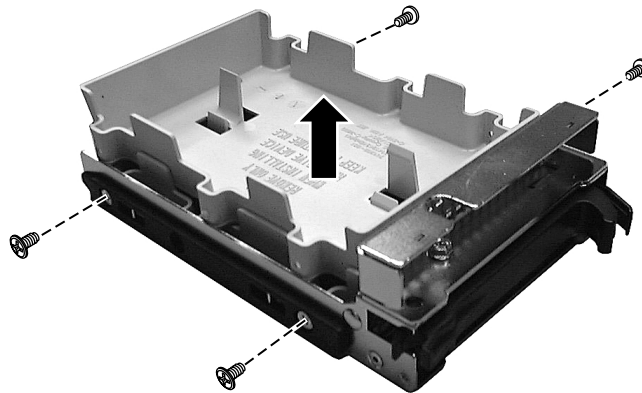
4 Install the new drive in the carrier using the four screws you removed in Step 3.
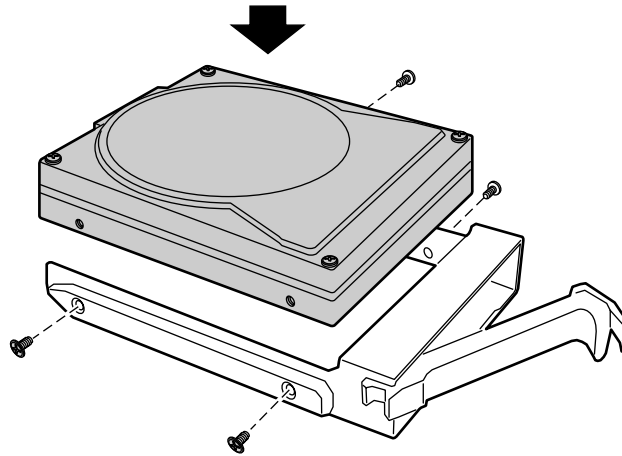
5 Align the drive rails with the slots at the sides of the drive bay. Leave the retention lever in the open position.

6 Push the drive all of the way into the drive bay until the retention lever starts to close because of contact with the front of the chassis. Make sure the hooks on the side of the retention lever latch on the side of the drive bay and firmly close the lever.

7 Run any necessary utilities to setup the new drive. See the utility software documentation for details.

Replacing the slimline CD drive

The slimline CD drive is located below the diskette drive on the left side of the front panel.

➲ To replace the slimline CD drive:

1 Turn off the system and disconnect the power cord and all other external peripheral devices.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 For easier access to the CD drive, remove the cables to the diskette drive as described in "Replacing the diskette drive" on page 24. Note the orientation of the cables so you can replace them later.

4 Remove the power and data cables from the back of the CD drive, noting their locations and orientations. (You will reconnect these cables after you install the new drive.)

5 Loosen the three captive thumbscrews that secure the CD drive tray to the chassis.
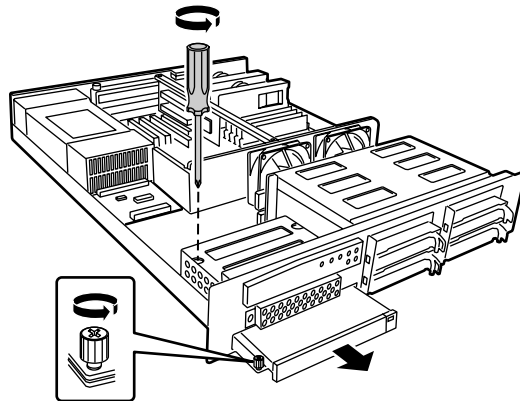
6 Slide the CD drive tray out of the front of the chassis.

7 Remove the CD drive from the tray by removing the three screws that secure the drive to the tray and disconnecting the drive connector at the back of the tray.
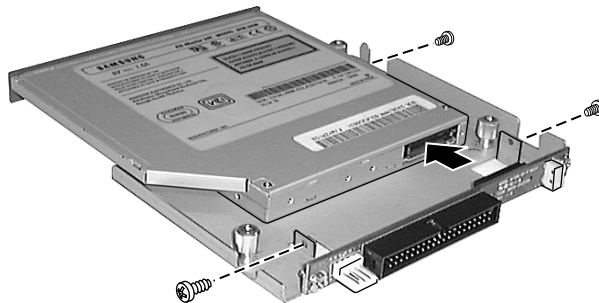
8 Place the new drive on the tray, connecting the drive to the tray connector and replacing the three screws you removed in Step 7.

9 Reinstall the CD drive tray in the chassis and secure it with the three screws you removed in Step 5.

10 Connect the power and data cables, making sure the cables are in their original positions. (See your drive documentation for proper cable orientation.)

11 Reconnect the diskette drive cables using the instructions in "Replacing the diskette drive" on page 24.

12 Close the case. (See "Closing the case" on page 20.)

13 Reconnect the power cord and all other external peripheral devices, then turn on the system.

Memory

Four DIMM sockets on the system board support up to 2.0 Gigabytes (GB) of PC/100 SDRAM.

Replacing memory

The DRAM DIMMs supported by the system board conform to the following standards:

- 128 MB, 256 MB, and 512 MB ECC DIMMs
- PC/100-compliant, unbuffered, ECC SDRAM
- 128 MB minimum system memory
- 2.0 GB maximum system memory

When you select and install DIMMs, keep the following in mind:

- Registered DIMMs should not be combined with unbuffered DIMMs
- Memory should be added in order, from DIMM 1 to DIMM 4.
- There can be no empty slots between installed DIMMs.
- No jumper settings are required for the memory size or type because the BIOS automatically detects this information.

➲ To replace DIMMs:

1 Turn off the system and disconnect the power cord and all other external peripheral devices.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Pull open the socket clamps on each side of the DIMM socket, then lift the DIMM out of the socket. Store the DIMM in an anti-static container.
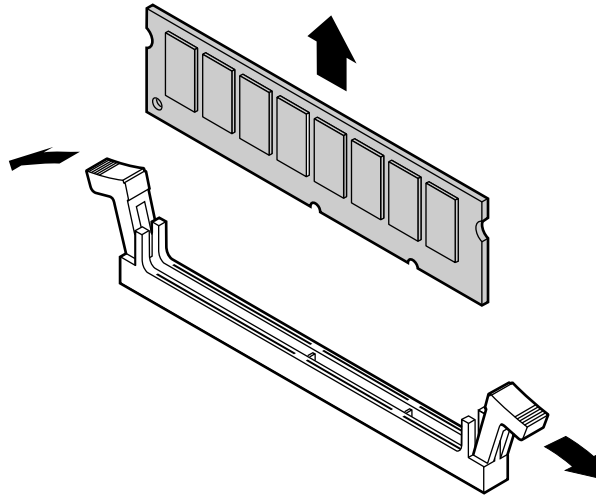
4 Insert the new DIMM into the socket, aligning the two notches in the DIMM with the two notches in the DIMM socket.
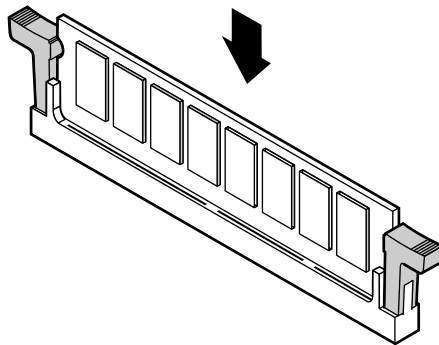
5 Gently press the DIMM into the socket until it is firmly seated. Inserting the DIMM automatically locks the socket clamps on each end of the DIMM.

6 Close the case. (See "Closing the case" on page 20.)

7 Reconnect the peripherals and the power cord, then turn on the system.

Adding memory

The DRAM DIMMs supported by the server board conform to the following standards:

- 128 MB, 256 MB, and 512 MB ECC DIMMs
- PC/100-compliant, unbuffered, ECC SDRAM
- 128 MB minimum system memory
- 2.0 GB maximum system memory

When you select and install DIMMs, keep the following in mind:

- Registered DIMMs should not be combined with unbuffered DIMMs
- Memory should be added in order, from DIMM 1 to DIMM 4.
- There can be no empty slots between installed DIMMs.
- No jumper settings are required for the memory size or type because the BIOS automatically detects this information.

➲ To add DIMMs:

1. Turn off the system and disconnect the power cord and all other external peripheral devices.

2. Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3. Pull open the socket clamps on each side of the DIMM socket.

4. Insert the new DIMM into the socket, aligning the two notches in the DIMM with the two notches in the DIMM socket.
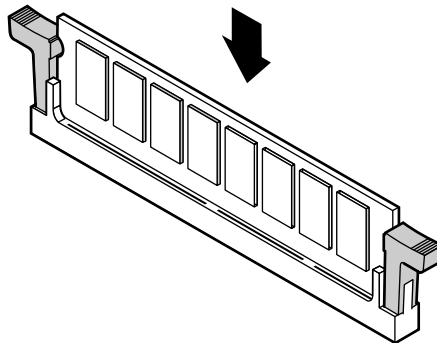
5 Gently press the DIMM into the socket until it is firmly seated. Inserting the DIMM automatically locks the socket clamps on each end of the DIMM.

6 Close the case. (See "Closing the case" on page 20.)

7 Reconnect the peripherals and the power cord, then turn on the system.

Processors

The system is compatible with the Intel® Pentium® III 600 MHz and faster processors with 100 MHz front-side bus (FSB). As many as two processors may be installed in the system. You do not need to install additional voltage regulator modules (VRMs), because the VRMs for both processors are built into the system board.

Replacing a processor

When replacing a processor, order a processor upgrade kit from Gateway. The kit includes the processor, a fansink or heatsink, and a disposable grounding wrist strap.

Caution	A heatsink or fansink must be installed on each processor. Installing a processor without a heatsink or fansink could result in damage to, or failure of, the processor.

➲ **To replace a processor:**

1 Turn off the system and disconnect the power cord and all external peripheral devices.

2 Open the case by following the instructions on page 18. (See "Preventing static electricity discharge" on page 17.)

3 Disconnect the processor fan cable from the processor fan connector on the system board.

4 Place the head of a flat-bladed screwdriver between the processor module and the tab on the side of one of the processor retention brackets that hold the processor to be removed.
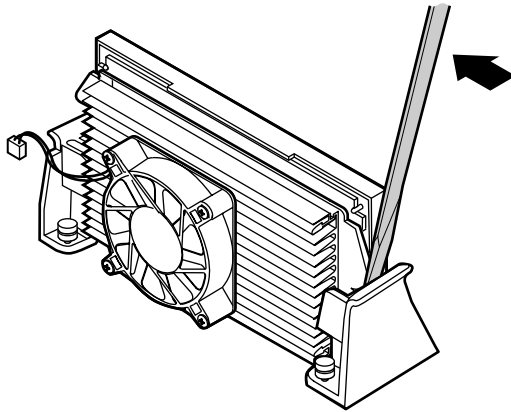
5 Push the handle of the screwdriver toward the processor. When the tab that locks the processor in place opens, lift up slightly on the side of the processor.

6 Repeat the previous two steps for the other side of the processor.

7 Pull the processor up and out of the slot.
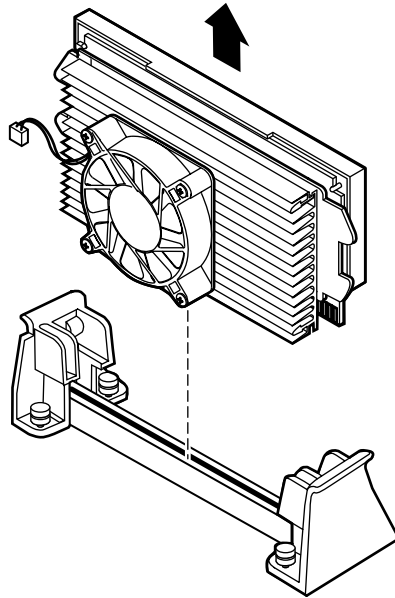
8 If the heatseink is separate, attach it to the processor.

9 Align the new processor with the processor slot (note that the processor slot is keyed so the processor can only be installed one way) and press firmly to install it.
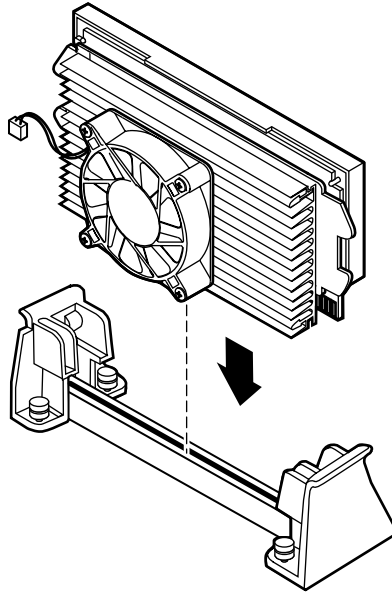
10 Reconnect the processor fan cable to the processor fan connector on the system board.

11 Close the case. (See "Closing the case" on page 20.)

12 Reconnect the power cord and all other cords you removed, then turn on the system.

Important

Gateway recommends that you run a processor retest from the BIOS Setup utility whenever you replace or add a processor.

Adding a processor

The system is compatible with the Intel® Pentium® III 600 MHz and faster processors with 100 MHz front-side bus (FSB). As many as two processors may be installed in the system. The second processor must match the first processor in speed or the system functions at the speed of the slowest processor.

When adding a second processor order a processor upgrade kit from Gateway. The kit includes the processor, a fansink or heatsink, and a disposable grounding wrist strap.

Caution ⚠️	A heatsink or fansink must be installed on each processor. Installing a processor without a heatsink or fansink could result in damage to, or failure of, the processor.

➲ To add a second processor:

1 Turn off the system and disconnect the power cord and all external peripheral devices.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Remove the terminator card from the second processor slot to make room for the additional processor.
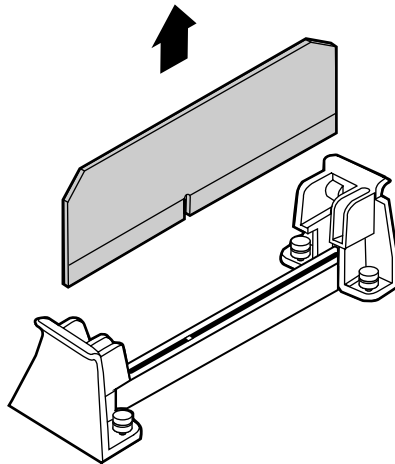
4 If the heatseink is separate, attach it to the processor.

5 Align the new processor with the processor slot. Note that the processor slot is keyed so the processor can only be installed one way. Press it firmly to install it.
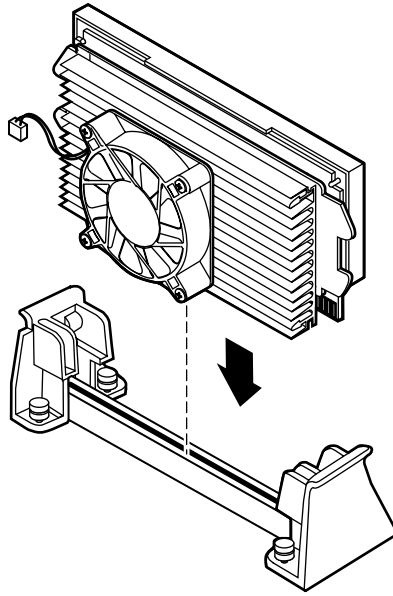
6 Connect the processor fan cable to the secondary processor fan connector on the system board (See "System board" on page 6 for location).

7 Close the case. (See "Closing the case" on page 20.)

8 Reconnect the power cord and all other cords you removed, then turn on the system.

Important	Gateway recommends that you run a processor retest from the BIOS Setup utility whenever you replace or add a processor.

Replacing the battery

The battery provides power for the system real-time clock and CMOS memory, which holds the system configuration information.

If your battery is failing you may notice the server clock slowing down and giving you the incorrect time.

Open the BIOS Setup utility and write down all the values in the various menus before replacing the battery. Replacing the battery resets the BIOS Setup utility to its default values.

Warning	Danger of explosion if battery is incorrectly replaced.
	Replace only with the same or equivalent type recommended by manufacturer.
	Dispose of used batteries according to manufacturer's instructions.

Warnung	Explosionsgefahr bel falsch eingebautter batterie.
	Ersetzen der batterien nur mit batterien des gleichen typs oder mit batterien vom hersteller empfohlenen typs.
	Entsorgen gebrauchter batterien entsprechned herstellerangaben.

Attention	Il y a danger d'explosion s'il y a replacement incorrect de la batterie.
	Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
	Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

➲ To replace the battery:

1 Restart the server and start the BIOS Setup utility.

2 Write down the CMOS values from each tab in the BIOS Setup utility so you can reenter them after you replace the battery. For more information about the BIOS Setup utility, see "About the BIOS Setup utility" on page 65.

3 Turn off the server, disconnect the power cord and all external peripheral devices.

4 Open the case by following the instructions on page 18. (See "Preventing static electricity discharge" on page 17.)

5 Locate the battery on the system board (see "System board" on page 6). The battery is circular and has the positive pole mark (+) on the top.

6 Using a small, flat-bladed screwdriver, carefully remove the battery from its socket on the system board.
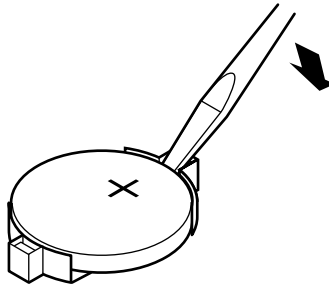
7 Press the new battery in the socket with the positive pole up. Be sure you have pressed the battery down far enough for it to contact the base of the socket (it should snap into place).

8 Close the case, as described in "Closing the case" on page 20.

9 Reconnect the peripherals and the power cord, then turn on the system.

10 If the CMOS data is not correct, change the information in the BIOS Setup utility using the data you recorded in Step 2.

Troubleshooting the battery installation

If you have problems after installing the new battery, try each of the items listed below, restarting the server after each try.

■ Turn off the server and make sure that all exterior cables are attached and secured to the correct connectors.

■ Make sure that all power switches are on. If the server is plugged into a power strip or surge protector, make sure it is turned on also.

■ Enter the BIOS Setup utility and compare the settings on the screen with your notes or the system hardware manuals. Correct any discrepancies.

■ Turn off the server, remove the cover, and make sure that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors did not miss any pins. Disconnect and reconnect the cables. Close the case as described in "Closing the case" on page 20, reconnect the modem and power cords, then turn on the server.

■ Turn off the server, remove the cover and, if you have the proper test equipment, make sure that the new battery has power. (Although unlikely, your new battery may be defective.) Close the case as described in "Closing the case" on page 20, reconnect the power cord, then turn on the server.

Expansion cards

The server has two expansion slots on the riser card that can be used for a variety of expansion cards. These slots support 32-bit, 33 MHz PCI cards. Both slots will hold full-length cards. The expansion slots on the system board are not used.

Replacing an expansion card

You must install an expansion card in slot 1 before you can install an expansion card in slot 2.

➲ **To replace an expansion card:**

1 Set any jumpers and switches on the replacement card, if required in the card instructions.

2 Turn off the server, then disconnect the power cord and all external peripheral devices.

3 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

4 Disconnect any cables attached to the card.

5 Loosen the captive thumbscrew that holds the expansion slot cover bracket in place and remove the expansion slot cover bracket.
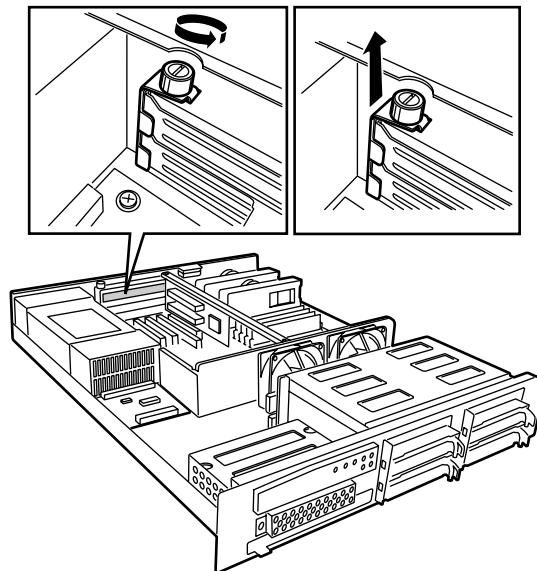
6 If the card is a full length card, slide the card guide behind the fans by pushing out the lever and sliding the card guide to the side until it locks into place, then remove the expansion card from the system.
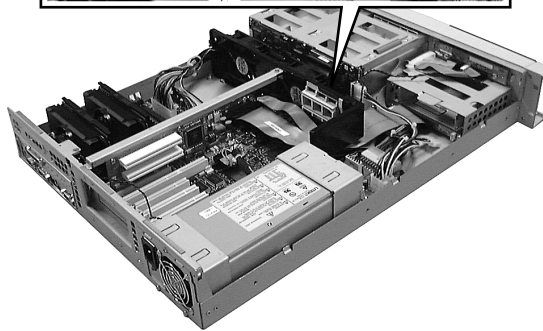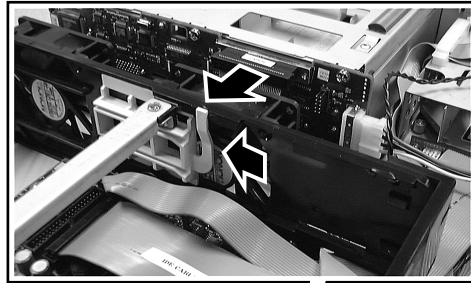
7 If the replacement riser card has an ISA retainer (a plastic piece on the end of the card), remove the ISA retainer, then install the expansion card in the chassis. PCI slot 1 is the bottom slot and PCI slot 2 is the top slot.
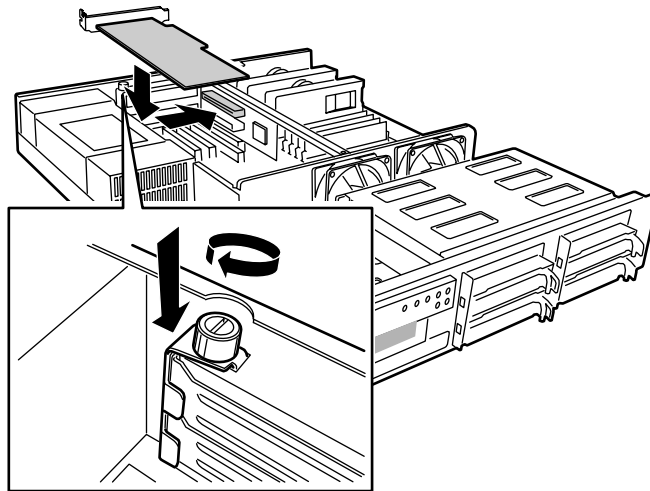
8 Replace the expansion slot cover bracket and tighten the thumbscrew.

9 Replace the card guide by sliding it back to its original position until it clicks in place. Make sure the end of the card is in the right slot in the card guide.

10 Connect any cables to the card (see card documentation for proper cable orientation).

11 Close the case. (See "Closing the case" on page 20.)

12 Reconnect the peripherals and the power cord, then turn on the system.

You may need to reconfigure the server after replacing an expansion card. You may also need to install upgrade software that came with the card. Check the card documentation for additional information.

Adding an expansion card

When adding an expansion card, you must install an expansion card in slot 1 before you can install an expansion card in slot 2.

➲ To add an expansion card:

1 Set any jumpers and switches on the card, if required in the card instructions.

2 Turn off the server, disconnect the power cord and all external peripheral devices.

3 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

4 Locate an available slot and remove the slot cover by removing the thumbscrew on the slot cover bracket, then remove the slot cover bracket. PCI slot 1 is the bottom slot and PCI slot 2 is the top slot.
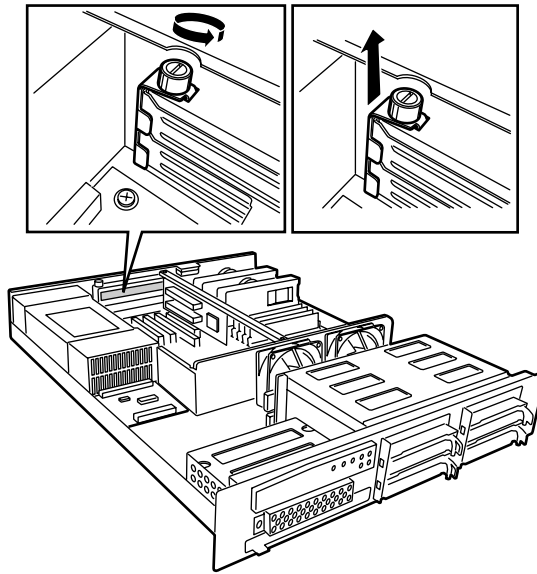
5 Pull out the slot cover.

6 If the card is a full-length expansion card, press the lever to release the card guide and slide the card guide to the side.
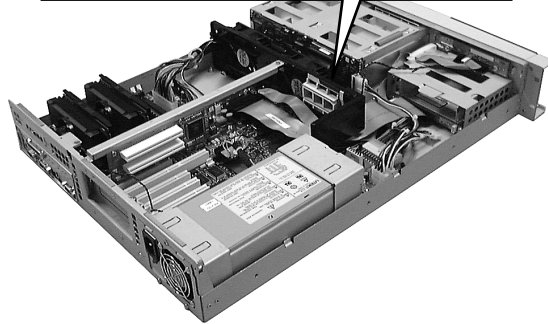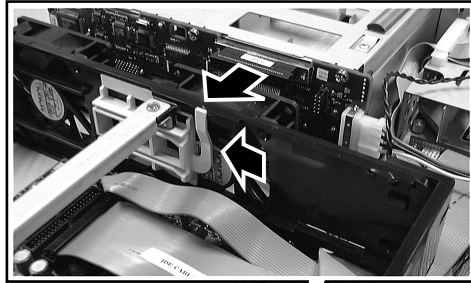
7 Insert the bottom edge of the expansion card (the keyed edge with the contacts) into the slot on the riser card and push in firmly to seat the card.
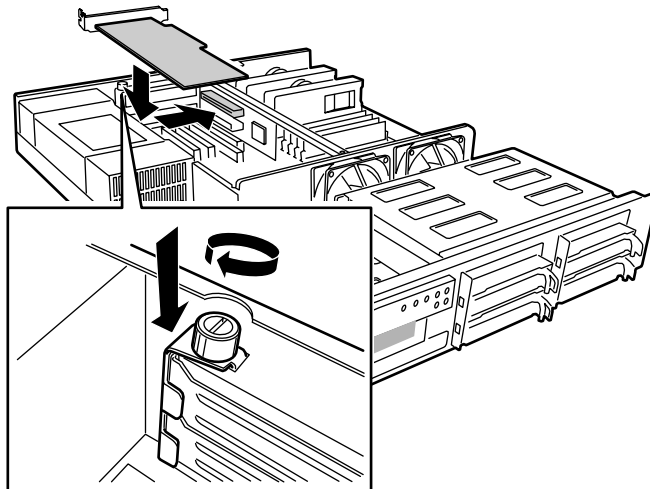
8 Replace the expansion slot cover bracket and tighten the thumbscrew.

9 Replace the card guide by sliding it back to its original position until it clicks in place. Make sure the end of the card is in the right slot in the card guide.

10 Connect any cables to the card (see card documentation for proper cable orientation).

11 Close the case. (See "Closing the case" on page 20.)

12 Reconnect the peripherals and the power cord, then turn on the system.

You may need to reconfigure the server after installing some expansion cards. You may also need to install software that came with the card. Check the card documentation for additional information.

Replacing the power supply

The 275-W power supply provides all system power through a power distribution board.

➲ **To replace the power supply:**

1 Turn off the system and disconnect the power cord and all peripherals.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Open the power supply cover by removing the two screws that secure it in place, then swing the cover up.
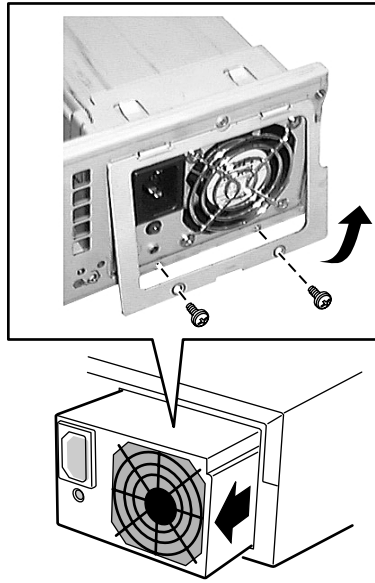
4 Holding the sides of the power supply, push it out through the back panel of the chassis.

5 Insert the new power supply through the back panel, making sure that the connectors on the power supply seat firmly in the connectors on the power distribution board.

6 Close the power supply cover and replace the screws you removed in Step 3.

7 Close the case. (See "Closing the case" on page 20.)

8 Reconnect the power cord and all external peripherals, then turn on the system.

Replacing the power distribution board

The power distribution board is beside the power supply and serves to separate the power produced by the power supply into the voltages needed by the various internal components.

⮕ To replace the power distribution board:

1 Turn off the system and disconnect the power cord and external peripherals.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Remove the power supply as described in "Replacing the power supply" on page 51.

4 Unplug the cables that connect the power distribution board to other system components. Note the location and orientation of each cable before you remove it.

5 Remove the four screws that secure the board to the chassis, then remove the power distribution board.
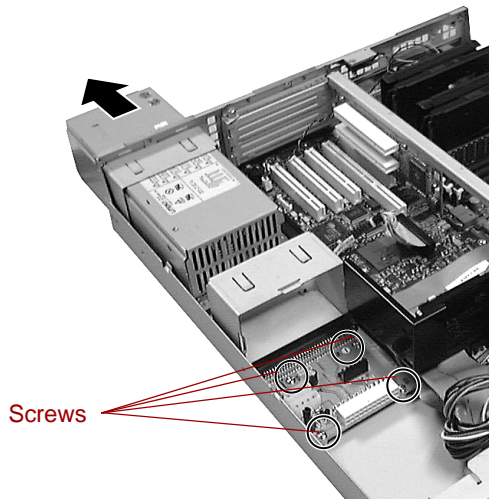
Screws

6 Place the replacement board in the chassis in the same orientation as the original board, then replace the four screws you removed in Step 5.

7 Reconnect the cables to the board at the same locations and in the same orientations as they were originally connected.

8 Replace the power supply.

9 Close the case. (See "Closing the case" on page 20.)

10 Reconnect the power cord and external peripherals, then turn on the system.

Replacing the fans

The fans are located between the system board and the hot plug drive cage. The fans are not hot-plug capable and you must shut down the system to replace a fan.

➲ **To replace a fan:**

1 Turn off the system and disconnect the power cord and external peripherals.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Unplug the fan cables from the system board.

4 Pull out on the tabs on both sides of the fan and lift the fan out of the fan assembly.

Tabs
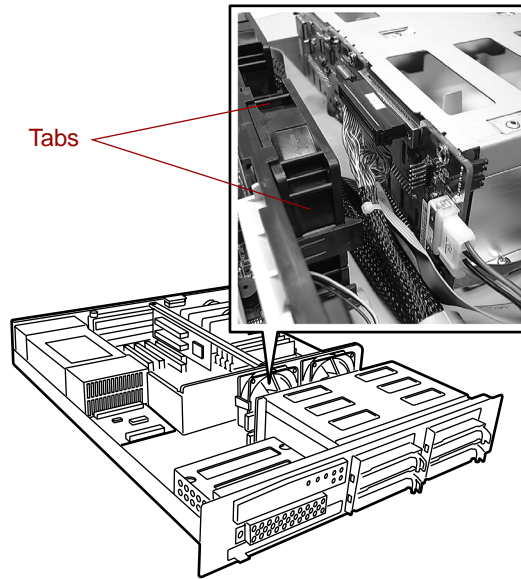
5 Insert the new fan into the fan assembly. Make sure the direction of rotation and airflow match the direction and airflow of the fan you removed.

6 Plug the fan connector into the connector on the system board. Fan 1 plugs into connector J1J1 and fan 2 plugs into connector J1G6.

7 Close the case. (See "Closing the case" on page 20.)

8 Reconnect the power cord and external peripherals, then turn on the system.

Replacing the front panel board

The front panel board is mounted on the front of the chassis, inside the front panel.

➲ **To replace the front panel board:**

1 Turn off the system and disconnect the power cord and all external peripherals.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Disconnect all cables from the front panel board. Note the location and orientation of each cable as you remove it.

4 Remove the two screws that secure the board to the front of the chassis, then remove the board from the system.
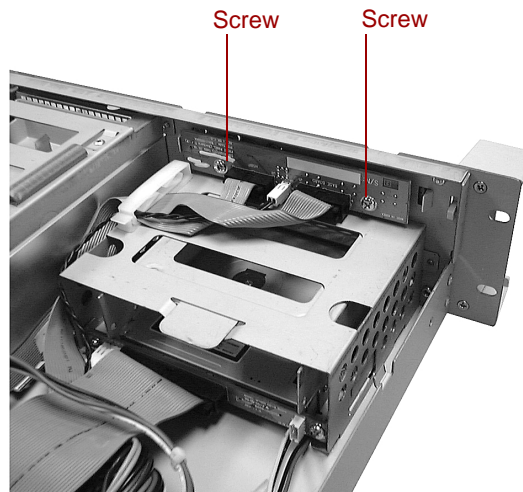
Screw   Screw

5 Install the new front panel board by replacing the two screws you removed in Step 4.

6 Plug the front panel cables into the appropriate connectors on the front panel board.

7 Close the case. (See "Closing the case" on page 20.)

**8** Reconnect the power cord and the external peripherals, then turn on the system.

Replacing the hot-plug backplane

The four drive hot-plug backplane is at the back of the hot-plug drive cage. The backplane supports as many as four hot-swappable LVD SCSI drives.

➲ To replace the hot-plug backplane:

1 Turn off the system and disconnect the power cord and all external peripheral devices.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Disconnect all cables to the hot-plug backplane, noting the connectors so you can reconnect them after replacing the backplane.

4 Remove all hot-plug drives, being careful to note which drive was in which slot.

5 Remove the six screws that secure the hot-plug drive bay in the chassis.
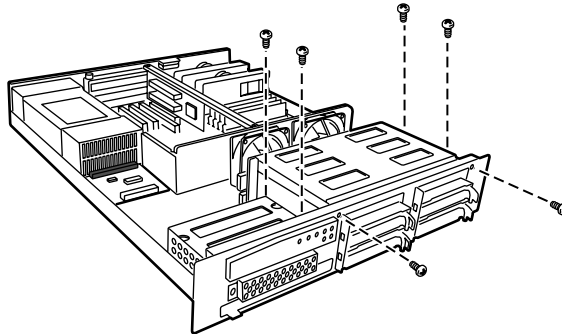
6 Tilt the bay forward to clear the tabs at the bottom from the slots in the chassis, then lift the drive bay out of the system.

7 Remove the six screws that secure the backplane to the hot-plug drive bay and remove the backplane.

Screw   Screw   Screw   Screw
      Screw   Screw
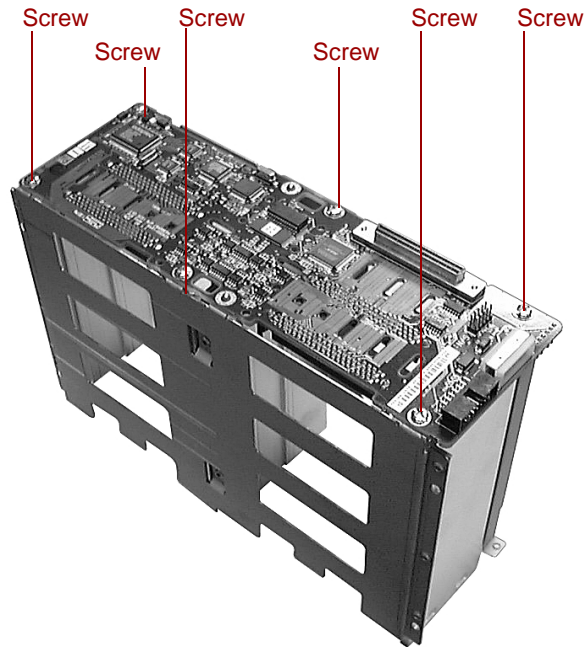
8 Set any jumpers on the new backplane for your configuration.

9 Secure the new backplane to the back of the hot-plug drive bay with the six screws you removed in Step 7.

10 Replace the drive bay in the chassis. Make sure the tabs on the bottom of the drive bay fit into the slots on the bottom of the chassis and the drive bay sits flat on the bottom of the chassis.
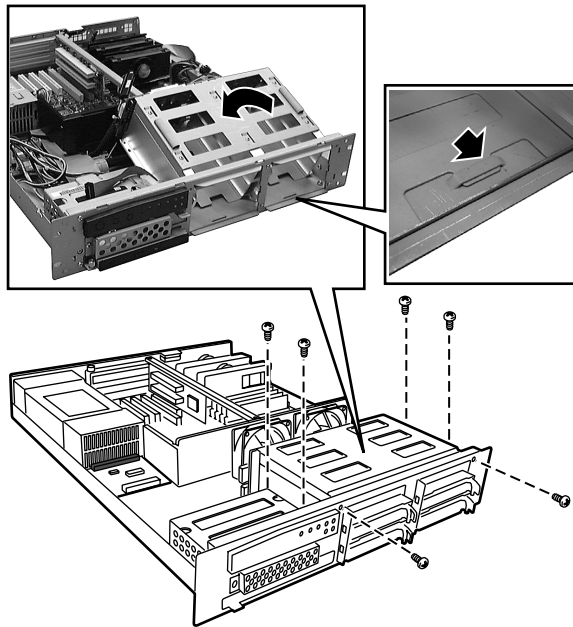
11 Replace the six screws you removed in Step 5.

12 Reconnect all cables on the backplane to the correct connectors.

13 Replace all hot-plug drives. Make sure that you replace them in the same slots that they were in before you removed them.

14 Close the case. (See "Closing the case" on page 20.)

15 Reconnect all peripherals and the power cord, then turn on the system.

Replacing the system board

The system board integrates the other elements of the system, such as the processor, memory, storage, networking, and communications.

➲ To replace the system board:

1 Turn off the system and disconnect the power cord and all external peripheral devices.

2 Open the case. (See "Opening the case" on page 18 and "Preventing static electricity discharge" on page 17.)

3 Remove all expansion cards from the system. (See "Replacing an expansion card" on page 46.)

4 Remove the two screws that secure the riser card assembly to the chassis, then lift the riser card assembly out of the chassis.
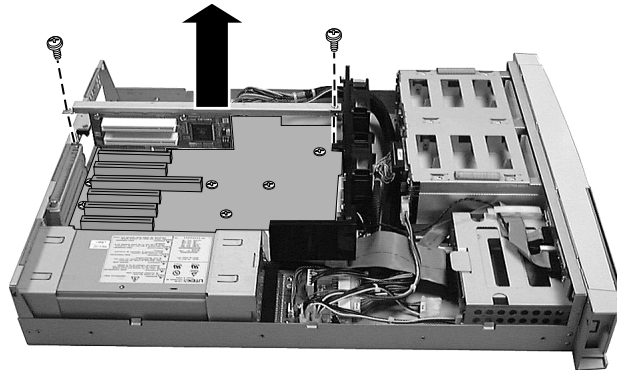
5 Disconnect all cables from the system board. Note the location and orientation of each cable before you remove it so you can replace it when you have installed the new system board.

6 Remove the three screws that secure the fan assembly to the chassis, then lift the fan assembly up and place it on the hot-plug drive bay.
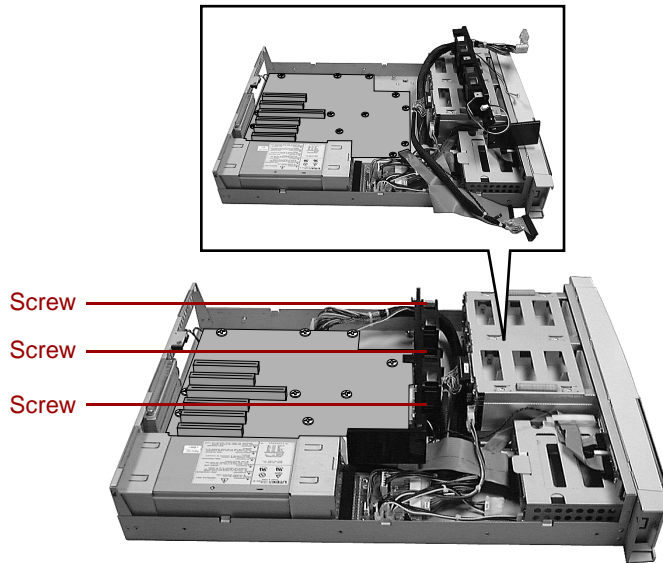
Screw

Screw

Screw

7 Remove any processors and DIMMs that you will install in the new system board. (See "Replacing memory" on page 33 and "Replacing a processor" on page 37.)

8 Remove the eleven screws that secure the system board to the chassis, then lift the system board out of the chassis.
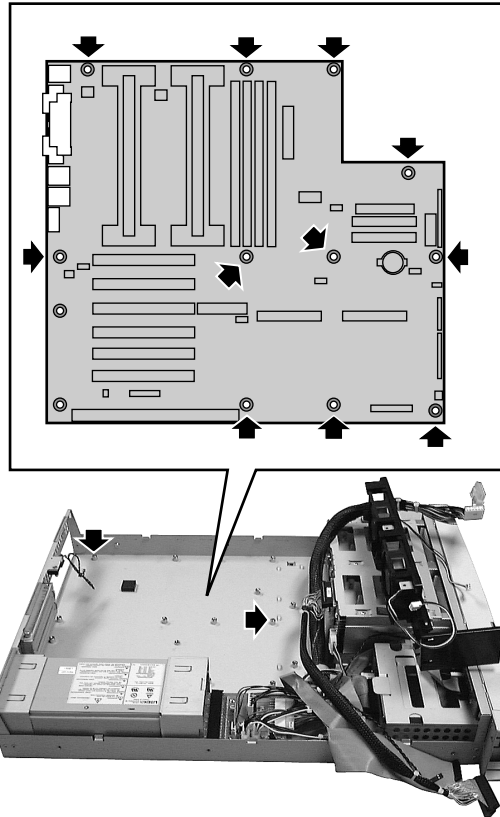
9 Remove the new system board from its anti-static bag and set any jumpers that you may need to set for your configuration. See "System board" on page 6 and "Setting the system board jumpers" on page 68.

10 Place the new system board in the chassis. Make sure the two standoffs with shoulders fit into the matching holes in the system board.
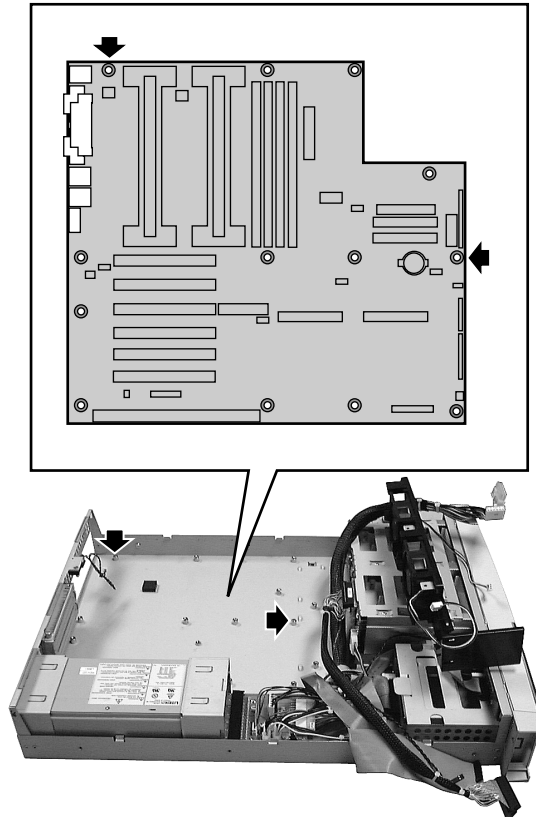
11 Replace the eleven screws you removed in Step 8.

12 Install the DIMM(s) and processor(s) in the new system board. (See "Replacing memory" on page 33 and "Replacing a processor" on page 37.)

13 Replace the fan assembly using the three screws you removed in Step 6.

14 Reconnect the system cables to the appropriate connectors on the system board. See "System board" on page 6 for reference.

15 Replace the riser card using the two screws you removed in Step 4. Make sure you seat the riser card securely into the proper connector on the system board.

16 Replace any expansion cards you removed from the system in Step 3. (See "Replacing an expansion card" on page 46.)

17 Close the case. (See "Closing the case" on page 20.)

18 Reconnect all peripherals and the power cord, then turn on the system.

Using the BIOS Setup Utility

5

About the BIOS Setup utility

The server BIOS has a built-in setup utility that lets you configure several basic system characteristics. The settings are stored in battery-backed RAM and are retained even when the power is off.

Enter the BIOS Setup utility by restarting the server, then pressing F2 when prompted during the startup process. The Main BIOS Setup utility screen opens. It may not look exactly like the screen shown below.

```
                        BIOS Setup Utility
Main     Advanced     Security     Server     Boot     Exit

                                              Item Specific Help
              System Time:  [xx:xx:xx]
              System Date:  [xx/xx/xxxx]


         Legacy Diskette A:  [    ]
         Legacy Diskette B:  [    ]

       Hard Disk Pre-Delay:  [enabled]

        Primary IDE Master:  [auto]
         Primary IDE Slave:  [    ]
      Secondary IDE Master:  [    ]
       Secondary IDE Slave:  [    ]

         Processor Settings:


                 Language:  [English (US)]

 F1 Help      ↑↓ Select Item    -/+ Change Values       F9 Setup Defaults
 ESC Exit    ←→ Select Menu   ENTER Select > Sub-Menu   F10 Save & Exit
```

As you select items on the Main menu or in submenus, you see specific information related to the current selection in the Item Specific Help box.

The command bar shows the keystrokes necessary to access help, navigate through the menus, and perform other functions.

- F1 opens the Help screen, providing general help for using the BIOS Setup utility.

- The ↑ (up arrow) and ↓ (down arrow) keys select items in the menu.

- The ← (left arrow) and → (right arrow) keys move you between the menus.

- ENTER either moves you to a submenu screen when a selected item is preceded by > or activates a selected field.

- ESC closes the screen you are in and returns you to the previous screen or exits you from the BIOS Setup utility.

- F9 opens a screen that lets you return all values to their default settings.

- F10 opens a screen that lets you save all settings, then exit the BIOS Setup utility.

The main screen has the following menu selections at the top of the screen:

- **Main** gives you access to basic information and settings related to your system hardware and configuration.

- **Advanced** gives you access to information and settings for system resources, hardware, and system configuration.

- **Security** gives you access to settings related to system access passwords.

- **Server** gives you access to information and options for server management features.

- **Boot** gives you access to information and settings for boot features and boot sequences.

- **Exit** gives you access to options for exiting the BIOS Setup utility.

Refer to the Help box on the right side of the BIOS Setup screens for information about menu items.

Updating the BIOS

If you need a new version of the BIOS, you can download the BIOS update from the technical support area on the Gateway Web site (www.gatewayatwork.com) and install the new version from a diskette.

To update the BIOS you need to perform the following tasks in sequence:

- Create a bootable diskette
- Note the current BIOS settings
- Create the BIOS update diskette
- Update the BIOS
- Restore the BIOS settings

Follow the detailed instructions for updating the BIOS that are included in the self-extracting file that you can download from the technical support area of Gateway's Web site.

Important	Whenever the BIOS is updated, the microcode table is returned to the default setting. To update the table to the proper settings for your processor, you must run the MULOADER.EXE program, which is available from the same site where you obtain the BIOS update files.

Setting the system board jumpers

The system board has three jumpers. Each of these jumpers has a specific function described in the sections below.

The CMOS Clear jumper

The CMOS Clear jumper on the system board (pins 1 through 3 of jumper J2J1) lets you clear all BIOS Setup settings. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to perform this task. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
CMOS protected	Pins 1-2	Normal operation (default)
Clear CMOS	Pins 2-3	Causes server to clear all BIOS settings and return to defaults

Caution ⚠ Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

Password Clear jumper

The Password Clear jumper on the system board (pins 5 through 7 of jumper J2J1) lets you clear the passwords. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to perform this task. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Protect	Pins 5-6	Normal operation (default)
Clear	Pins 6-7	Clears all passwords at bootup

Caution ⚠	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

Recovery Boot jumper

The Recovery Boot jumper on the system board (pins 9 through 11 of jumper J2J1) lets you recover from a failed BIOS update by booting from diskette and loading the correct BIOS update. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to perform this task. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Normal boot	Pins 9-10	Normal boot from BIOS (default)
Recovery boot	Pins 10-11	Boot from diskette and correct the BIOS code

Caution ⚠	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

BIOS Boot Block Write Enable jumper

The BIOS Boot Block Write Enable jumper on the system board (pins 13 through 15 of jumper J2J1) lets you update the BIOS boot block. (See the figure on page 6 for the location of the jumper.)

Caution	Incorrect programming of the boot block may make the system unbootable.

The following table shows the settings required to perform this function. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Normal	Pins 13-14	BIOS boot block is write protected (default)
BIOS update	Pins 14-15	Allows the BIOS boot block to be updated

Caution	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

BMC Boot Block Write Enable jumper

The BMC Boot Block Write Enable jumper on the system board (jumper J4J2) lets you program the BMC boot block using the correct utilities. You can download these utilities from the Gateway Web site along with the latest version of the BMC firmware. (See the figure on page 6 for the location of the jumper.)

Caution	Incorrect programming of the boot block may make the system unbootable.

The following table shows the settings required to allow programming of the BMC boot block. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Normal	Pins 1-2	BMC boot block is write protected (default)
Writes enabled	Pins 2-3	Allows BMC boot block to be programmed through the correct utilities.

Caution	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

FRB Enable jumper

The server supports fault resilient booting (FRB) which causes the second processor to take over the boot process if the first processor fails to respond within a specified time. The FRB Enable jumper on the system board (pins 1 through 3 on jumper J3J1) lets you enable FRB. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to enable FRB. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Enable	Pins 1-2	FRB is enabled (default)
Disable	Pins 2-3	FRB is disabled

Caution	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

Intrusion Detection Enable jumper

The Intrusion Detection Enable jumper on the system board (pins 5 through 7 on jumper J3J1) lets you enable intrusion detection. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to enable intrusion detection. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Enable	Pins 5-6	Intrusion detection is enabled (default)
Disable	Pins 6-7	Intrusion detection is disabled

Caution	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

BMC Firmware Update jumper

The BMC Firmware Update jumper on the system board (pins 9 through 11 on jumper J3J1) lets you update the BMC firmware during system boot. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to let you update the BMC firmware. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Normal	Pins 9-10	Normal boot (default)
Update BMC	Pins 10-11	System updates BMC

Caution	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

WOL Enable jumper

The WOL Enable jumper on the system board (jumper J5A2) lets you enable the wake-on-LAN feature. (See the figure on page 6 for the location of the jumper.)

The following table shows the settings required to perform this task. Make sure you turn off the server and unplug the power cord before moving the jumper.

Mode	Jumper Setting	Action When Set
Disabled	Pins 1-2	Disables wake-on-LAN
Enabled	Pins 2-3	Enables wake-on-LAN (default)

Caution	Moving the jumper while the power is on can damage the server. Always turn off the server and unplug the power cord before moving the jumper.

Managing the Server

6

Avoiding power source problems

Surge suppressors, line conditioners, and uninterruptible power supplies can help protect the server against power source problems.

Surge suppressors

During a power surge, the voltage level of electricity coming into the server can increase far above normal levels and cause data loss or system damage.

Protect your server and peripherals by connecting them to a surge suppressor, which will absorb voltage surges and prevent them from reaching your server.

When purchasing a surge suppressor:

- Make sure the surge suppressor meets the appropriate product safety certification for your location, such as Underwriters Laboratories (UL) or Conformite European (CE).

- Check the maximum amount of voltage the suppressor allows to pass through the line. The lower the voltage that the suppressor allows to pass through, the better the protection for the server.

- Check the energy absorption (*dissipation*) rating. The higher the energy absorption rating, the better the protection for the server.

- Check line-conditioner capabilities. A line conditioner smooths out some normal line noise (small voltage fluctuations) of an electrical supply.

Line conditioners

A line conditioner protects the server from the small fluctuations in voltage from an electrical supply. Most systems can handle this variation (*line noise*) without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if the server is located near, or shares a circuit with, a device that causes electromagnetic interference, such as a television or a motor.

Some surge suppressors and uninterruptible power supplies include simple line-conditioning capabilities.

Uninterruptible power supplies

Use a standby uninterruptible power supply (UPS) to protect your server from data loss during a total power failure. A UPS uses a battery to keep your server running temporarily during a power failure and lets you save your work and shut down your server. You cannot run your server for an extended period of time while using only the UPS.

Maintain and manage your hard drive

Regular maintenance can keep your hard drive operating efficiently and good file management can keep the server free of unwanted files while making important files secure and easier to find.

Hard drive maintenance utility

If you are using the Windows NT operating system, you can help maintain the performance of your hard drive by regularly using Check Disk.

Important	For other operating systems, such as Windows 2000 or Novell Netware, refer to the appropriate operating system manual.

Using Check Disk in Windows NT

Bad sectors are parts of a hard drive or diskette that will not hold data. A lost allocation unit is a group of sectors that has lost its place in the table that the operating system uses to locate files. Check Disk checks the hard drive for bad sectors or lost allocation units and lets you fix them.

Use Check Disk from once a week to once a month, depending on how often you use the server. Also use Check Disk if you have any hard drive problems.

➲ **To use Check Disk:**

  1 Double-click the **My Computer** icon. The My Computer window opens.

  2 Right-click the drive you want to check.

  3 Select **Properties**. The drive's properties window opens.

  4 Click the **Tools** tab.

  5 At **Error-checking**, click **Check Now**. The Check Disk window opens.

  6 Scan the entire hard drive by selecting **Scan for and attempt recovery of bad sectors**.

  7 Click **Start.** Check Disk checks the drive for errors.

  8 Follow any on-screen instructions for completing the scan.

Hard drive management practices

By deleting unneeded files from your hard drive and managing the space that is automatically allocated for saving certain files, you can help maintain the performance of the hard drive. We suggest that you first check your hard drive for available space, then back up important files prior to deleting unneeded files, in case you delete important files by mistake.

Checking hard drive space

In Windows, you can see a chart of the available hard drive space.

➲ **To check hard drive space:**

  1 Double-click on the **My Computer** icon on the desktop. The My Computer window opens.

  2 Right-click the drive you want to check.

  3 Select **Properties**. The drive's properties window opens. The **General** tab shows you the available and used space on the drive.

Backing up files

Regularly backing up your files protects you from losing data and lets you keep fewer files on your hard drive. Back up old files to a large capacity disk drive or tape drive and delete the files from your hard drive. You can use the software that came with your tape backup drive or your large capacity disk drive to back up the files.

You can also back up files by running the Backup utility that came with your operating system. In Windows NT, Backup copies files to a tape drive.

➲ To run Backup in Windows NT:

1 Click **Start**, then select **Programs**, **Administrative Tools,** then **Backup**.

2 Follow the on-screen instructions.

Deleting unneeded files

By deleting unneeded files from the hard drive, you free up space on the hard drive and help improve hard-drive performance. The following sections give you some simple ways to delete unneeded files.

Deleting Windows temporary files

During normal operation, Windows constantly creates new temporary (.tmp) files. You can safely delete all but the most recent .tmp files.

➲ To delete .tmp files:

1 Open Windows Explorer, then select **Tools**, **Find**, then **Files and Folders**.

2 In the **Named** text box, type ***.tmp**

3 In the **Look in** drop down list, select your drive letter.

4 Click **Find Now**. The list of .tmp files appears.

5 Click **Modified** above the list. To see the **Modified** button, you may need to maximize the Find window. The list is sorted by date.

6 Highlight all the files in the list except those with the current date.

7 Press SHIFT + DELETE. A dialog box opens asking if you want to delete the files.

8 Click **Yes**. The files are deleted.

Deleting temporary Internet files

As you visit Web sites, your browser stores temporary Internet files on your hard drive in a *memory cache* and a *disk cache.* Files in the memory cache are removed when you turn off your server. Files are saved in the disk cache until the space designated for the cache is full. See your browser's Help files for instructions on emptying the disk cache.

You can save space on the hard drive by decreasing the size of the Internet file disk cache. See your browser's Help files for instructions.

Emptying the Recycle Bin

When you delete a file from your hard drive in Windows, it is not immediately removed from the hard drive. Instead, the file is moved into the Recycle Bin. Because files are stored in the Recycle Bin and not deleted from the hard drive immediately, you can retrieve a file that you accidentally delete from the hard drive.

To delete all the files from the Recycle Bin, right-click the **Recycle Bin** icon on the desktop, then click **Empty Recycle Bin**.

You can save space on the hard drive by decreasing the size of the Recycle Bin.

➲ **To decrease the size of the Recycle Bin:**

1 Right-click the **Recycle Bin,** then select **Properties**.

2 At the Global tab, select either **Configure drives independently** or **Use one setting for all drives.**

3 If you are configuring drives independently, click the tab for the drive you want to configure.

4 Move the slider to set the size of the Recycle Bin. A good initial setting is 5%.

5 Click **OK**.

Protecting the server against viruses

A *virus* is a program that attaches itself to a program or data file on a computer, then spreads from one computer to another. Viruses can damage data, cause computers to malfunction, and can display annoying or offensive messages. Some viruses can go unnoticed for long periods of time because they are activated by a certain date or time. Protect your server from viruses by:

■ Using an anti-virus program to check files and programs that are on diskettes, attached to e-mail messages, or downloaded from the Internet. After you run the anti-virus program you can back up your files to diskettes, a separate hard drive, or a high-capacity storage drive.

■ Keeping your anti-virus program updated.

■ Obtaining all software from reputable sources and checking the software for viruses before installing it.

■ Disabling macros on suspicious Microsoft Word and Excel files. These programs will warn you if a document that you are opening contains a macro that might have a virus.

➲ **To remove a virus:**

1 Find and remove the virus immediately using an anti-virus program.

2 Turn off your server and leave it off for at least 30 seconds.

3 Turn on the server and rescan for the virus.

4 If the virus is still present, contact the manufacturer of your anti-virus program or Gateway Client Care.

System administration and control

The server has three server-management tools included to enable administration and control of Windows NT environments. These tools are Intel® Server Control (ISC), ManageX Event Manager, and the Direct Platform Control (DPC) Console.

Intel Server Control (ISC)

Using a graphical user interface, ISC can locally or remotely provide real-time monitoring and alerting for server hardware sensors. ISC monitors and records system status indicators such as temperature, voltage, cooling, chassis intrusion, processor status, cooling fan status, and power supply status. You can establish a threshold or range of accepted values for each of these indicators and you can configure ISC to respond to variances in a number of ways, from an entry in the event log, to a displayed message or audio alarm, or even a complete server shutdown.

ISC also provides a system hardware inventory, SCSI controller status, LAN adapter status, and BIOS and system slot information.

You can find additional information about Intel Server Control under **Documentation** on the Server Companion CD which came with the server.

ManageX Event Manager

ManageX lets the system administrator manage multiple systems on a Windows NT, Windows 2000, or Novell Netware network from a single window, and implement commands and policies across the network with a single action. With this tool you can automate system management tasks, which can be triggered by specific events or at specified thresholds.

You can find additional information about the ManageX Event Manager under **Documentation** on the Server Companion CD which came with the server.

Direct Platform Control (DPC) Console

The Direct Platform Control (DPC) Console provides remote emergency management of servers. The DPC Console is independent of the server operating system and provides a means to remotely diagnose problems or verify the state of the server. It will also turn the server on or off.

You can find additional information about DPC Console under **Documentation** on the Server Companion CD which came with the server.

System security

To help prevent unauthorized entry or use of the system, the system includes key locks on the chassis (to prevent entry) and the bezel door (to prevent use).

You can also set security measures in the BIOS Setup utility which establishes passwords and automatic system lockouts. The system also includes server management software that monitors the chassis intrusion switch.

Mechanical locks and monitoring

The system includes a chassis intrusion switch. When the access cover is opened, the switch transmits an alarm signal to the system board, where server management software processes the signal. You can program a response to an intrusion, for example, the system may power down or lock the keyboard.

Software locks through the BIOS Setup utility

The BIOS Setup utility provides several security features to prevent unauthorized or accidental access to the system. Once the security measures are enabled, access to the system is allowed only after you enter the correct password(s). For example, the utility lets you:

- Enable the keyboard lockout timer so the server requires a password to reactivate the keyboard and mouse after a specified time-out period of 1 to 120 minutes
- Set and enable administrator and user passwords
- Set secure mode to prevent keyboard or mouse input and to prevent use of the front panel reset and power switches
- Activate a hot-key combination to enter secure mode quickly
- Disable writing to the diskette drive when secure mode is set

Using passwords

If you set and enable a user password but not an administrator password, enter the user password to boot the system with limited BIOS Setup access.

If you set and enable both a user and an administrator password:

- Enter either one to boot the server and enable the keyboard and mouse
- Enter the administrator password to gain full access to the BIOS Setup to change the system configuration

Secure mode

Configure and enable the secure boot mode by using the BIOS Setup. When secure mode is in effect, you:

- Can boot the system and run the OS, but you must enter the user password to use the keyboard or mouse
- Cannot turn off system power or reset the system from the front panel switches

Taking the system out of secure mode does not change the state of system power. That is, if you press and release the power switch while secure mode is in effect, the system will not power off when secure mode is later removed. However, if the front panel power switch remains depressed when secure mode is removed, the system will power off.

Summary of software security features

The following table lists the software security features and describes what protection each offers. In general, to enable or set the features listed here, you must run the BIOS Setup utility and go to the Security Menu. The table also refers to other Setup utility menus. For more information on setting the security features, see "About the BIOS Setup utility" on page 65.

Feature	Description
Secure boot mode	To enter secure mode, set and enable a password to automatically put the system into secure mode.
	If you set a hot-key combination, you can secure the system by pressing the key combination. This means you do not have to wait for the inactivity time-out period.
	When the system is in secure mode, the system boots and runs the operating system. It does not accept mouse or keyboard input until you enter the user password.
	At bootup, if the system detects a CD in the CD-ROM drive or a diskette in drive A, it requests a password. When you enter the password, the system boots from CD or diskette and disables secure mode.
	If you have not installed a CD-ROM drive or if there is no CD in the drive or diskette in drive A, the system boots from drive C and automatically enters secure mode. All enabled secure mode features go into effect at bootup.
	To leave secure mode, enter the correct password(s).
Disable writing to diskette	In secure mode, the system will not boot from or write to a diskette unless a password is entered. To set these features, see "About the BIOS Setup utility" on page 65.
Disable the power and reset buttons	If you enable this protection feature, the system disables the power and reset buttons when in secure mode.
Set a time-out period so that keyboard and mouse input are not accepted.	You can specify and enable an inactivity time-out period from 1 to 120 minutes. If no keyboard or mouse action occurs for the specified period, keyboard and mouse input is not accepted. To set this feature, see "About the BIOS Setup utility" on page 65.
Control access to the BIOS Setup (set administrator password)	To control access to the system configuration, set an administrator password and enable it through Setup.
	If both the administrator and user passwords are enabled, either can be used to boot the system or enable the keyboard and/or mouse, but only the administrator password allows changes to Setup.
	Once set, passwords can be disabled by setting the password to a null string or by changing the Clear Password jumper. See "Password Clear jumper" on page 68.

Feature	Description
Control access to the system other than BIOS Setup (set user password)	To control access to the system, set a user password and enable the Password on Boot option using the BIOS Setup utility. Once set, passwords can be disabled by deleting the password or by changing the Password Clear jumper. See "Password Clear jumper" on page 68.
Boot without keyboard	The system can boot with or without a keyboard. During POST and before the system boots, the BIOS automatically detects and tests the keyboard, if present, and displays a message. Do not plug in a keyboard while the system is on.
Specify the boot sequence	The sequence you specify in the BIOS determines the boot order (see "About the BIOS Setup utility" on page 65). If secure mode is enabled (user password is set), you are prompted for a password before the system boots fully. If secure mode is enabled and the Secure Mode Boot option is also enabled, the system boots fully but requires a password before accepting any keyboard or mouse input.

System recovery

Take precautions that allow you to recover damaged files and recover your system in the event that your hard drive is damaged, or if your BIOS or system files get corrupted.

Creating a startup diskette

If your server hard drive is damaged, you may not be able to start the server from the hard drive. A startup diskette is a bootable diskette that lets you start the server and attempt to fix the problem.

When you set up Windows NT you are prompted to create a startup diskette. If you did not choose to create a startup diskette at that time, you may create one later by running the Windows NT upgrade/installation program. Perform this process by going to the DOS Command Prompt, changing to the C:\I386 subdirectory and typing **"winnt32/ox"**. Press ENTER and follow the prompts.

Using your Server Companion CD

The Server Companion CD included with your server can be used to:

■ Install hardware drivers for Windows NT

■ Reinstall selected utilities

■ Access system documentation

Instructions for each operating system are provided with the Server Companion CD.

Troubleshooting

7

Introduction

If the server does not operate correctly, re-read the instructions for the procedures you have performed. If an error occurs within an application, refer to the documentation supplied with the software. This section identifies solutions to some possible problems.

Troubleshooting checklist

Before turning on the system, make sure that:

- The power cord is connected to the AC power-in connector and an AC outlet.

- The AC outlet is supplying power.

- If a power strip is used it is turned on, setting the circuit breaker.

- If the power supply has a voltage selection switch, that the voltage selection switch reflects the proper voltage.

Verifying your configuration

If the server is not operating correctly, the BIOS may contain an invalid configuration parameter. Open the BIOS Setup utility and check your configuration settings. (See "About the BIOS Setup utility" on page 65.)

Troubleshooting guidelines

As you troubleshoot the server, keep the following guidelines in mind:

- Never remove the chassis cover while the server is turned on.

- Do not attempt to open the monitor; it is extremely dangerous. Even if the power is disconnected, stored energy in the components can be dangerous.

- If a peripheral does not work, make sure that all connections are secure.

- If you see an error message on the screen, write it down, word for word. You may be asked about it when calling Gateway Client Care.

- Only qualified personnel should open the system for maintenance.

- If you are qualified to maintain the system yourself, make sure you are properly grounded before opening the system chassis. See Chapter 3, Case Access, for more information on preventing electrostatic damage to the system.

CD problems

The system does not recognize the CD drive

Probable cause	Solution
The CD is not intended for PC use	Make sure that the disc is PC-compatible.
The CD is loaded incorrectly	Make sure that the label is facing up, then try again.
The CD is scratched or dirty	Try cleaning the CD with a lint-free cloth. Make sure the disk is not scratched.
The CD drive needs to be added as new hardware	In the **Control Panel** window (**Start** | **Settings** | **Control Panel**), double-click **Add New Hardware**. Follow the on-screen instructions for adding the drive.
The secondary IDE device may be disabled	Restart your server, then press F1 to enter the BIOS Setup utility program. From the **Advanced	IDE Configuration** menu, set the **IDE Controller** to **Both** and the **Secondary IDE Master** to **Auto**.

Probable cause	Solution
The CD drive cables are not installed correctly	Open the system, then make sure all cables between the IDE controller and the CD drive are correctly connected.
The CD drive may be defective	Replace the CD drive.

Hard drive problems

The system does not recognize a SCSI drive

Probable cause	Solution
SCSI hot-plug drive is not seated correctly	Open the system and reseat the hot-plug drive(s). This problem is most common immediately after shipping.
The SCSI bus is not properly terminated	Open the system and make sure that the last device on the SCSI chain is properly terminated.
The drive is configured with a conflicting SCSI address	Change the device's SCSI address to one that is not currently being used by the system.
The cables are not connected correctly	Open the system, then make sure the cables are connected properly.

Memory and processor problems

The system detected memory errors during start up

Probable cause	Solution
Memory was added or removed, and the new configuration was not saved in the BIOS Setup utility	Open the BIOS Setup utility and save the new memory configuration.
The memory was installed incorrectly	Make sure that the memory is proper seated and oriented.

Probable cause	Solution
A memory chip is faulty	Replace the card with the faulty chip. Third-party diagnostic programs can help determine which chip or memory segment is failing.

The system does not recognize a new or second processor

Probable cause	Solution
The processor was installed incorrectly	Check the installation. Make sure that the processor is fully seated in its socket. The processor should be recognized automatically if it was installed correctly.
The processor speed was not set correctly in the BIOS Setup utility	If the server BIOS lets you select the processor speed, make sure that you have selected the proper speed.
The system only detected one processor	Enable the processor retest in the BIOS Setup utility.

Modem problems

The system does not recognize the modem

Probable cause	Solution
The modem has not been added as new hardware	Add the modem as new hardware.
The modem is not connected to a live phone jack	Make sure that the line connected to the modem is working and plugged into the appropriate port on the modem (line port).
The phone jack is shared by another modem or telephone	If the modem shares the jack with another device, make sure that the other device does not have the port open.
The modem is not configured with a valid interrupt or address	Check the system settings for possible conflicts. If one exists, correct the problem by selecting an available interrupt and address.

Peripheral/Adapter problems

The system does not recognize a SCSI device

Probable cause	Solution
The device needs to be added as new hardware	From the **Control Panel** window (**Start | Settings | Control Panel**), double-click **Add New Hardware**. Follow the on-screen instructions for adding the device.
The SCSI ID may be invalid	Assign an available SCSI ID to the device.
The SCSI chain is not terminated	Make sure the last device on the SCSI chain is terminated.
The device cables are not installed correctly	Open the system, then check all cables between the controller and the device.

The system does not recognize the diskette drive

Probable cause	Solution
The diskette drive may be configured incorrectly	Restart your server, then press F1 to enter the BIOS Setup utility. In the **Boot	Removable Devices** menu, make sure that the diskette drive parameters are set correctly.
The drive cables are not connected properly	Open the system, then make sure all cables are properly connected to the controller card. Some systems do not have a floppy controller card because the floppy controller is built into the system board.
The drive controller is not seated properly	Open the system, then reseat the drive controller. Some systems do not have a floppy controller card because the floppy controller is built into the system board.

The diskette drive will not read, write, or format

Probable cause	Solution
The diskette is not IBM-formatted	Make sure that the diskette you are trying to format is IBM-compatible. If it is, try reformatting it. If not, get another diskette.
The disk is write protected	Make sure that the write-protection window on the upper-right corner of the diskette is closed (unprotected).

Probable cause	Solution
The diskette is corrupted	Run CheckDisk on the diskette. If errors are detected and corrected, try accessing the diskette again.

The diskette drive LED illuminates continuously

Probable cause	Solution
The diskette is corrupted	Remove the diskette from the drive. If the light remains on, try restarting the system.
The cable to the drive is not connected properly	Open the system, then make sure the cable between the diskette drive and its controller is properly connected. Make sure that the pins are not bent or misaligned.

The system does not recognize an expansion card

Probable cause	Solution
The interrupt or I/O address is set incorrectly	Check the address configuration of the adapter card and make sure that it does not conflict with another card in the system.
The card has not been configured through the software	Configure the card with the appropriate software.
The card was not installed correctly	Make sure the card jumpers are set correctly and reseat the card.

Printer problems

The printer will not turn on

Probable cause	Solution
The printer is not onlne (ready)	Make sure the on-line or ready light is on, or the display indicates "Ready."
The printer is not turned on	Make sure that the power switch is depressed or set to the On position. If power is applied to the printer, the green power LED should be illuminated.

Probable cause	Solution
The printer is not plugged in	Make sure that the power cable is plugged into a live power source.
The printer is defective	Try another printer, if one is available.

The printer is turned on but will not print

Probable cause	Solution
The printer is not connected to the system	Make sure the data cable between the printer and the system is properly connected. Make sure that it is connected to the proper port. Make sure the connector and cable have no bent or broken pins.
The printer is not designated as the default printer	If the printer that you are trying to print to is not the default printer, make sure that you have selected it through the program printer setup function.
The printer has not been added to the system	In the **Printers** window (**Start | Settings | Printers**), double-click **Add Printer**. Follow the on-screen instructions for adding the new printer.

The printer prints garbled text

Probable cause	Solution
The wrong driver is being used for the selected printer	In the Printers window (**Start** | **Settings** | **Printers**), select the printer. From the **File** menu, click **Properties**. Make sure that the printer is using the correct printer driver. If not, install the correct one.

System problems

The system will not start up

Probable cause	Solution
The system is not connected to an AC outlet	Make sure that the power cable is connected to an operating AC power source.
Voltage selection switch not set correctly	Make sure that the voltage selection switch is set to the correct power source.

Probable cause	Solution
Power supply alarm buzzes and power supply status LED blinks indicating a failed power supply module	Replace the indicated power supply module. (You can turn off the audible alarm by inserting an appropriate tool into the port on the front panel and pressing the switch.)
Power supply alarm buzzes and both power supply status LEDs blink, indicating a failed common component	Replace the entire power supply housing. (One or both of the power supply modules may also be bad.)

The system is non-responsive

Probable cause	Solution
An error occurs during an application or the server may be out of memory	Restart your server by pressing the reset button. If the system is still non-responsive, press and hold in the power button for 4 seconds to turn the system off. Turn the system back on, then follow the on-screen instructions.
Keyboard, mouse, and front panel are locked out when the password is set	Enter the password.

The keyboard does not work

Probable cause	Solution
Keyboard is locked out when the password is set	Enter the password.
A key was depressed while the system was starting up	Clear the sticking key, then turn off the system, wait for a few seconds, then turn the system back on.
The keyboard is not plugged in or connected properly	Make sure the cable is properly connected.
Something spilled into the keyboard	Turn off the system. Turn the keyboard upside down to drain it, then turn is right-side up to let it dry before using the keyboard again.
The keyboard is defective	Try a keyboard that you know is working.

The mouse does not work

Probable cause	Solution
Mouse is locked out when the password is set	Enter the password.
The mouse is not plugged in or connected properly	Make sure that the cable is plugged in correctly.
The mouse driver did not load when the system started	Load the appropriate mouse driver manually or contact technical support.
The mouse is defective	Try a mouse that you know is working.

The system power and reset buttons are not responsive:

Probable cause	Solution
The front panel is locked out when the password is set	Enter the password.

Video problems

The system is running but the screen is blank

Probable cause	Solution
The monitor is not turned on	Make sure that the monitor is plugged in and turned on. If power is applied to the monitor, the green power LED should illuminate.
The monitor data cable is not connected	Make sure that the monitor data cable is connected to the video controller on the back of the system.
The connector or cable is damaged	Check the connector and cable for bent or damaged pins.
The monitor brightness and contrast controls are turned down	Adjust the brightness and contrast knobs to the center position.
The monitor is defective	Connect a working monitor to the server.

Probable cause	Solution
The video card is not seated correctly	Open the system and reseat the video card. The server board may have a built-in video adapter, so there may not be a video adapter to remove and replace.
The video card is not compatible with the system	Check the documentation or technical support to make sure that the video card is compatible with the system. If not, obtain a compatible video card. The server board may have a built-in video adapter, so there may not be a video adapter to remove and replace.
The terminator card or the second processor is not seated properly	Open the system and reseat the terminator card or the second processor.

The image on the screen is dim or difficult to read

Probable cause	Solution
The monitor brightness and contrast controls are turned down	Adjust the brightness and contrast knobs until the text becomes clear.
Sunlight is glaring off the display	Position the monitor away from the sun or a window.
The monitor may be old	Replace the monitor.

The color monitor displays everything in black and white

Probable cause	Solution
The system was turned on before the monitor	Make sure that the monitor is turned on, then restart the system.
The display type is set incorrectly	In the Control Panel window (**Start** | **Settings** | **Control Panel**), double-click **Display**, set the display to the appropriate monitor type, then restart the system.

The displayed characters are garbled

Probable cause	Solution
The video cable is damaged	Make sure the connector and cable have no bent or damaged pins.

Probable cause	Solution
The display setup is incorrect	In the Control Panel window (**Start** | **Settings** | **Control Panel**), double-click **Display** and check the settings. The correct video type should be selected, along with a supported resolution. Check your monitor and video controller documentation for details.
The video card has failed	Try another video card.

The video is distorted

Probable cause	Solution
The monitor controls are not properly adjusted	Adjust the monitor controls until the text becomes clear. (See your monitor documentation for more information.)
The connector or cable is damaged	Check the connector and cable for bent or damaged pins.
The surge protector or UPS is damaged	Disconnect the monitor power cable, then connect it directly to the power source.
The monitor is too close to a source of electrical interference	Move the monitor away from sources of electrical interference, such as televisions, unshielded speakers, microwave ovens, fluorescent lights, and metal beams or shelves.
The monitor needs to be degaussed	Turn off the server and monitor and leave them off for at least a half hour, then restart the system.

Error messages

This section lists common error messages that you may see. These messages often indicate procedural errors such as an incorrect keystroke or a write-protected diskette. Some messages, however, may indicate a problem that requires you to consult the troubleshooting section of this manual.

Error message	Solutions
Access denied	Try saving to a new file or diskette.
	Move the write-protection tab over the hole on the back of the diskette.

Error message	Solutions
Bad command or file name	Make certain you entered the right command.
	Verify the specified drive, then try it again.
	If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER.
Base memory [xxx] expansion	This is an informational message only. No action is required.
Checking RAM on disk controller	Your BIOS configuration is incorrect. Open the BIOS Setup utility, then make sure the settings are correct.
CD-ROM is not recognized	See "The system does not recognize the CD drive" on page 88 for a possible solution.
Data error	Use CheckDisk on the drive with the error.
Decreasing available memory	Your BIOS configuration is incorrect. Enter the BIOS Setup utility, then make sure the settings are correct.
Diskette drive is not recognized	See "The system does not recognize the diskette drive" on page 91 for a possible solution.
Diskette drive 0 seek to track 0 failed	Enter the BIOS Setup utility, then make sure the settings are correct.
	Check the diskette drive cables. Make sure that Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette drive reset failed	Open the BIOS Setup utility, then make sure the settings are correct.
	Check the diskette drive cables. Make sure Pin 1 on the cable aligns with Pin 1 on the connector.
Diskette read failed - strike F1 to retry boot	Make sure that the boot disk contains the Command.com file.
	Use the configuration utility (if necessary) to make sure that your drive or controller configuration is correct.
	Press F1 to try to restart the server.
Gate A20 failure	You may have an XT keyboard connected to an AT system or vice versa. Make sure that the keyboard is configured to work with the appropriate system. Some keyboards have a switch to select either AT or XT.
Hard disk controller failure	Make sure that the hard drive cable is properly connected.
	Open the BIOS Setup utility, then make sure that the correct drive type is selected.
Hard disk controller failure - press F1 to try reboot	The drive controller may be defective. Press F1 to try to restart the server.
	Try running a disk formatting utility. For more information, refer to your operating system documentation.

Error message	Solutions
Insert bootable media device	See "The system does not recognize a SCSI drive" on page 89 for a possible solution.
	Backup your files as soon as possible.
Insufficient disk space	Check the free space on the disk volume. If the volume is full or almost full, remove unnecessary files.
Invalid configuration information	Open the BIOS Setup utility, then make sure the settings are correct.
Invalid password	Enter your password again, make sure to enter it correctly. Be aware that some passwords are case sensitive.
	If you do not know the password, you may need to reinstall the software you are trying to access.
	Startup passwords are stored in BIOS. If this password has been set and is unknown, you may be able to reset the password via system board jumper settings.
Keyboard clock line failure	Try a working keyboard.
	Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard controller failure	Try a working keyboard.
	Make sure that the keyboard is compatible with the system. You may have to change the switch setting to AT.
Keyboard not detected	See "The keyboard does not work" on page 94 for a possible solution.
	Turn off the system, then check the keyboard cable.
Keyboard stuck key failure	Remove any objects that may be resting on the keyboard, then restart the system.
	Check for sticking keys. Clean the keyboard if necessary.
Memory errors were detected while the system powered up	See "The system detected memory errors during start up" on page 89 for a possible solution.
Memory size error	Enter the BIOS Setup utility and save the memory configuration.
Non-system disk or disk error	Eject the diskette, then press ENTER.
	If the diskette is bootable, check it for errors.
Not enough memory	Close all programs that are not currently in use.
Print queue is full	Wait until the current print job has completed before sending another print job.
	If you receive this error often, you need to add memory to the printer.

Error message	Solutions
Printer is out of paper	Add paper to the printer.
	Make sure that the printer is online.
Required parameter missing	Make sure that you entered the right command.
	If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER.
Syntax error	Make sure that you entered the right command.
	If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER.
Time and date not set	Open the BIOS Setup utility, then set the system date and time.
Write protect error	Move the write-protection tab over the hole on the back of the diskette.

Safety, Regulatory, and Notices

A

The Gateway 7250R Server originally shipped with a Class A rating according to FCC rules part 15. Later modifications may have improved the rating to Class B. To check the rating of the system as shipped to you, check the FCC label at the back of the chassis for the rating.

Important safety information

Your Gateway system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

| **Warning** | Always follow these instructions to help guard against personal injury and damage to your Gateway system. |

Setting up your system

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Make sure you set up the system on a stable work surface.
- The product should only be operated from the type of power source indicated on the rating label.
- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.

- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Some products are equipped with a three-wire power cord to make sure that the product is properly grounded when in use. The plug on this cord will only fit into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into an outlet, contact an electrician to install the appropriate outlet.
- If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- If your system is fitted with a TV Tuner, cable, or satellite receiver card, make sure that the antenna or cable system is electrically grounded to prevent against voltage surges and build up of static charges.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to avoid eating and drinking near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturer's instructions.
- When the computer is turned off, a small amount of electrical current still flows through the computer. Always unplug all power cables and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
    - The power cord or plug is damaged.
    - Liquid has been spilled into the system.
    - The system does not operate properly when the operating instructions are followed.
    - The system was dropped or the cabinet is damaged.
    - The system performance changes.

Replacement parts and accessories

Use only replacement parts and accessories recommended by Gateway.

Important	Do not use Gateway products in areas classified as hazardous locations. Such areas include patient care areas of medical and dental facilities, oxygen-laden environments, or industrial facilities.

Warnings

WARNING: English (US)	AVERTISSEMENT: Français	WARNUNG: Deutsch	AVVERTENZA: Italiano	ADVERTENCIAS: Español
The power supply in this product contains no user-serviceable parts. There may be more than one supply in this product. Refer servicing only to qualified personnel.	Le bloc d'alimentation de ce produit ne contient aucune pièce pouvant être réparée par l'utilisateur. Ce produit peut contenir plus d'un bloc d'alimentation. Veuillez contacter un technicien qualifié en cas de problème.	Benutzer können am Netzgerät dieses Produkts keine Reparaturen vornehmen. Das Produkt enthält möglicherweise mehrere Netzgeräte. Wartungsarbeiten müssen von qualifizierten Technikern ausgeführt werden.	Rivolgersi ad un tecnico specializzato per la riparazione dei componenti dell'alimentazione di questo prodotto. È possibile che il prodotto disponga di più fonti di alimentazione.	El usuario debe abstenerse de manipular los componentes de la fuente de alimentación de este producto, cuya reparación debe dejarse exclusivamente en manos de personal técnico especializado. Puede que este producto disponga de más de una fuente de alimentación.
Do not attempt to modify or use the supplied AC power cord if it is not the exact type required. A product with more than one power supply will have a separate AC power cord for each supply.	Ne pas essayer d'utiliser ni modifier le câble d'alimentation CA fourni, s'il ne correspond pas exactement au type requis. Le nombre de câbles d'alimentation CA fournis correspond au nombre de blocs d'alimentation du produit.	Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht genau um den erforderlichen Typ handelt. Ein Produkt mit mehreren Netzgeräten hat für jedes Netzgerät ein eigenes Netzkabel.	Non modificare o utilizzare il cavo di alimentazione in c.a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto. Ad ogni fonte di alimentazione corrisponde un cavo di alimentazione in c.a. separato.	No intente modificar ni usar el cable de alimentación de corriente alterna, si no corresponde exactamente con el tipo requerido. El número de cables suministrados se corresponden con el número de fuentes de alimentación de corriente alterna que tenga el producto.
The power button on the system does not turn off system AC power. To remove AC power from the system, you must unplug each AC power cord from the wall outlet or power supply. The power cord(s) is considered the disconnect device to the main (AC) power. The socket outlet that the system plugs into shall be installed near the equipment and shall be easily accessible.	Notez que le commutateur CC de mise sous tension /hors tension du panneau avant n'éteint pas l'alimentation CA du système. Pour mettre le système hors tension, vous devez débrancher chaque câble d'alimentation de sa prise.	Der Wechselstrom des Systems wird durch den Ein-/Aus-Schalter für Gleichstrom nicht ausgeschaltet. Ziehen Sie jedes Wechselstrom-Netzkabel aus der Steckdose bzw. dem Netzgerät, um den Stromanschluß des Systems zu unterbrechen.	L'interruttore attivato/disattivato nel pannello anteriore non interrompe l'alimentazione in c.a. del sistema. Per interromperla, è necessario scollegare tutti i cavi di alimentazione in c.a. dalle prese a muro o dall'alimentazione di corrente.	Nótese que el interruptor activado/desactivado en el panel frontal no desconecta la corriente alterna del sistema. Para desconectarla, deberá desenchufar todos los cables de corriente alterna de la pared o desconectar la fuente de alimentación.
SAFETY STEPS: Whenever you remove the chassis covers to access the inside of the system, follow these steps: 1 Turn off all peripheral devices connected to the system. 2 Turn off the system by pressing the power button. 3 Unplug all AC power cords from the system or from wall outlets. 4 Label and disconnect all cables connected to I/O connectors or ports on the back of the system. 5 Provide some electrostatic discharge (ESD) protection by wearing an antistatic wrist strap attached to chassis ground of the system—any unpainted metal surface—when handling components. 6 Do not operate the system with the chassis covers removed.	**CONSIGNES DE SÉCURITÉ -** Lorsque vous ouvrez le boîtier pour accéder à l'intérieur du système, suivez les consignes suivantes: 1 Mettez hors tension tous les périphériques connectés au système. 2 Mettez le système hors tension en mettant l'interrupteur général en position OFF (bouton-poussoir). 3 Débranchez tous les cordons d'alimentation c.a. du système et des prises murales. 4 Identifiez et débranchez tous les câbles reliés aux connecteurs d'E-S ou aux accès derrière le système. 5 Pour prévenir les décharges électrostatiques lorsque vous touchez aux composants, portez une bande antistatique pour poignet et reliez-la à la masse du système (toute surface métallique non peinte du boîtier). 6 Ne faites pas fonctionner le système tandis que le boîtier est ouvert.	**SICHERHEISMASSNAHMEN:** Immer wenn Sie die Gehäuseabdeckung abnehmen um an das Systeminnere zu gelangen, sollten Sie folgende Schritte beachten: 1 Schalten Sie alle an Ihr System angeschlossenen Peripheriegeräte aus. 2 Schalten Sie das System mit dem Hauptschalter aus. 3 Ziehen Sie den Stromanschlußstecker Ihres Systems aus der Steckdose. 4 Auf der Rückseite des Systems beschriften und ziehen Sie alle Anschlußkabel von den I/O Anschlüssen oder Ports ab. 5 Tragen Sie ein geerdetes Antistatik Gelenkband, um elektrostatische Ladungen (ESD) über blanke Metallstellen bei der Handhabung der Komponenten zu vermeiden. 6 Schalten Sie das System niemals ohne ordnungsgemäß montiertes Gehäuse ein.	**PASSI DI SICUREZZA:** Qualora si rimuovano le coperture del telaio per accedere all'interno del sistema, seguire i seguenti passi: 1 Spegnere tutti i dispositivi periferici collegati al sistema. 2 Spegnere il sistema, usando il pulsante spento/acceso dell'interruttore del sistema. 3 Togliere tutte le spine dei cavi del sistema dalle prese elettriche. 4 Identificare e sconnettere tutti i cavi attaccati ai collegamenti I/O od alle prese installate sul retro del sistema. 5 Qualora si tocchino i componenti, proteggersi dallo scarico elettrostatico (SES), portando un cinghia anti-statica da polso che è attaccata alla presa a terra del telaio del sistema – qualsiasi superficie non dipinta – . 6 Non far operare il sistema quando il telaio è senza le coperture.	**INSTRUCCIONES DE SEGURIDAD:** Cuando extraiga la tapa del chasis para acceder al interior del sistema, siga las siguientes instrucciones: 1 Apague todos los dispositivos periféricos conectados al sistema. 2 Apague el sistema presionando el interruptor encendido/apagado. 3 Desconecte todos los cables de alimentación CA del sistema o de las tomas de corriente alterna. 4 Identifique y desconecte todos los cables enchufados a los conectores E/S o a los puertos situados en la parte posterior del sistema. 5 Cuando manipule los componentes, es importante protegerse contra la descarga electrostática (ESD). Puede hacerlo si utiliza una muñequera antiestática sujetada a la toma de tierra del chasis — o a cualquier tipo de superficie de metal sin pintar. 6 No ponga en marcha el sistema si se han extraído las tapas del chasis.

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After you have completed the six SAFETY steps above, you can remove the system covers. To do this: 1 Unlock and remove the padlock from the back of the system if a padlock has been installed. 2 Remove and save all screws from the covers. 3 Remove the covers.	Une fois TOUTES les étapes précédentes accomplies, vous pouvez retirer les panneaux du système. Procédez comme suit : 1 Si un cadenas a été installé sur à l'arrière du système, déverrouillez-le et retirez-le. 2 Retirez toutes les vis des panneaux et mettez-les dans un endroit sûr. 3 Retirez les panneaux.	Nachdem Sie die oben erwähnten ersten sechs SICHERHEITSSCHRITTE durchgeführt haben, können Sie die Abdeckung abnehmen, indem Sie: 1 Öffnen und entfernen Sie die Verschlußeinrichtung (Padlock) auf der Rückseite des Systems, falls eine Verschlußeinrichtung installiert ist. 2 Entfernen Sie alle Schrauben der Gehäuseabdeckung. 3 Nehmen Sie die Abdeckung ab.	Dopo aver seguito i sei passi di SICUREZZA sopracitati, togliere le coperture del telaio del sistema come seque: 1 Aprire e rimuovere il lucchetto dal retro del sistema qualora vi ne fosse uno installato. 2 Togliere e mettere in un posto sicuro tutte le viti delle coperture. 3 Togliere le coperture.	Después de completar las seis instrucciones de SEGURIDAD mencionadas, ya puede extraer las tapas del sistema. Para ello: 1 Desbloquee y extraiga el bloqueo de seguridad de la parte posterior del sistema, si se ha instalado uno. 2 Extraiga y guarde todos los tornillos de las tapas. 3 Extraiga las tapas.
For proper cooling and airflow, always reinstall the chassis covers before turning on the system. Operating the system without the covers in place can damage system parts. To install the covers: 1 Check first to make sure you have not left loose tools or parts inside the system. 2 Check that cables, add-in boards, and other components are properly installed. 3 Attach the covers to the chassis with the screws removed earlier, and tighten them firmly. 4 Insert and lock the padlock to the system to prevent unauthorized access inside the system. 5 Connect all external cables and the AC power cord(s) to the system.	Afin de permettre le refroidissement et l'aération du système, réinstallez toujours les panneaux du boîtier avant de mettre le système sous tension. Le fonctionnement du système en l'absence des panneaux risque d'endommager ses pièces. Pour installer les panneaux, procédez comme suit : 1 Assurez-vous de ne pas avoir oublié d'outils ou de pièces démontées dans le système. 2 Assurez-vous que les câbles, les cartes d'extension et les autres composants sont bien installés. 3 Revissez solidement les panneaux du boîtier avec les vis retirées plus tôt. 4 Remettez le cadenas en place et verrouillez-le afin de prévenir tout accès non autorisé à l'intérieur du système. 5 Rebranchez tous les cordons d'alimentation c. a. et câbles externes au système.	Zur ordnungsgemäßen Kühlung und Lüftung muß die Gehäuseabdeckung immer wieder vor dem Einschalten installiert werden. Ein Betrieb des Systems ohne angebrachte Abdeckung kann Ihrem System oder Teile darin beschädigen. Um die Abdeckung wieder anzubringen: 1 Vergewissern Sie sich, daß Sie keine Werkzeuge oder Teile im Innern des Systems zurückgelassen haben. 2 Überprüfen Sie alle Kabel, Zusatzkarten und andere Komponenten auf ordnungsgemäßen Sitz und Installation. 3 Bringen Sie die Abdeckungen wieder am Gehäuse an, indem Sie die zuvor gelösten Schrauben wieder anbringen. Ziehen Sie diese gut an. 4 Bringen Sie die Verschlußeinrichtung (Padlock) wieder an und schließen Sie diese, um ein unerlaubtes Öffnen des Systems zu verhindern. 5 Schließen Sie alle externen Kabel und den AC Stromanschlußstecker Ihres Systems wieder an.	Per il giusto flusso dell'aria e raffreddamento del sistema, rimettere sempre le coperture del telaio prima di riaccendere il sistema. Operare il sistema senza le coperture al loro proprio posto potrebbe danneggiari i componenti del sistema. Per rimettere le coperture del telaio: 1 Controllare prima che non si siano lasciati degli attrezzi o dei componenti dentro il sistema. 2 Controllare che i cavi, dei supporti aggiuntivi ed altri componenti siano stati installati appropriatamente. 3 Attaccare le coperture al telaio con le viti tolte in precedenza e avvitarle strettamente. 4 Inserire e chiudere a chiave il lucchetto sul retro del sistema per impedire l'accesso non autorizzato al sistema. 5 Ricollegare tutti i cavi esterni e le prolunghe AC del sistema.	Para obtener un enfriamiento y un flujo de aire adecuados, reinstale siempre las tapas del chasis antes de poner en marcha el sistema. Si pone en funcionamiento el sistema sin las tapas bien colocadas puede dañar los componentes del sistema. Para instalar las tapas: 1 Asegúrese primero de no haber dejado herramientas o componentes sueltos dentro del sistema. 2 Compruebe que los cables, las placas adicionales y otros componentes se hayan instalado correctamente. 3 Incorpore las tapas al chasis mediante los tornillos extraídos anteriormente, tensándolos firmemente. 4 Inserte el bloqueo de seguridad en el sistema y bloquéelo para impedir que pueda accederse al mismo sin autorización. 5 Conecte todos los cables externos y los cables de alimentación CA al sistema.
A microprocessor and heat sink may be hot if the system has been run-ning. Also, there may be sharp pins and edges on some board and chassis parts. Contact should be made with care. Consider wearing protective gloves.	Le microprocesseur et le dissipateur de chaleur peuvent être chauds si le système a été sous tension. Faites également attention aux broches aiguës des cartes et aux bords tranchants du capot. Nous vous recommandons l'usage de gants de protection.	Der Mikroprozessor und der Kühler sind möglicherweise erhitzt, wenn das System in Betrieb ist. Außerdem können einige Platinen und Gehäuseteile scharfe Spitzen und Kanten aufweisen. Arbeiten an Platinen und Gehäuse sollten vorsichtig ausgeführt werden. Sie sollten Schutzhandschuhe tragen.	Se il sistema è stato a lungo in funzione, il microprocessore e il dissipatore di calore potrebbero essere surriscaldati. Fare attenzione alla presenza di piedini appuntiti e parti taglienti sulle schede e sul telaio. È consigliabile l'uso di guanti di protezione.	Si el sistema ha estado en funcionamiento, el microprocesador y el disipador de calor pueden estar aún calientes. También conviene tener en cuenta que en el chasis o en el tablero puede haber piezas cortantes o punzantes. Por ello, se recomienda precaución y el uso de guantes protectores.
Danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Dispose of used batteries according to manufacturer's instructions.	Danger d'explosion si la batterie n'est pas remontée correctement. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le fabricant. Disposez des piles usées selon les instructions du fabricant.	Bei falschem Einsetzen einer neuen Batterie besteht Explosionsgefahr. Die Batterie darf nur durch denselben oder einen entsprechenden, vom Hersteller empfohlenen Batterietyp ersetzt werden. Entsorgen Sie ver-brauchte Batterien den Anweisungen des Herstellers entsprechend.	Esiste il pericolo di un esplosione se la pila non viene sostituita in modo corretto. Utilizzare solo pile uguali o di tipo equivalente a quelle consigliate dal produttore. Per disfarsi delle pile usate, seguire le istruzioni del produttore.	Existe peligro de explosión si la pila no se cambia de forma adecuada. Utilice solamente pilas iguales o del mismo tipo que las recomendadas por el fabricante del equipo. Para deshacerse de las pilas usadas, siga igualmente las instrucciones del fabricante.

WARNING: English (US)	AVERTISSEMENT: Français	WARNUNG: Deutsch	AVVERTENZA: Italiano	ADVERTENCIAS: Español
The system is designed to operate in a typical office environment. Choose a site that is: ■ Clean and free of airborne particles (other than normal room dust). ■ Well ventilated and away from sources of heat including direct sunlight. ■ Away from sources of vibration or physical shock. ■ Isolated from strong electromagnetic fields produced by electrical devices. ■ In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppresser and disconnect telecommunication lines to your modem during an electrical storm. ■ Provided with a properly grounded wall outlet. ■ Provided with sufficient space to access the power supply cords, because they serve as the product's main power disconnect.	Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être : ■ Propre et dépourvu de poussière en suspension (sauf la poussière normale). ■ Bien aéré et loin des sources de chaleur, y compris du soleil direct. ■ A l'abri des chocs et des sources de vibrations. ■ Isolé de forts champs électromagnétiques géénérés par des appareils électriques. ■ Dans les régions sujettes aux orages magnétiques il est recomandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage. ■ Muni d'une prise murale correctement mise à la terre. ■ Suffisamment spacieux pour vous permettre d'accéder aux câbles d'alimentation (ceux-ci étant le seul moyen de mettre le système hors tension).	Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte: ■ sauber und staubfrei sein (Hausstaub ausgenommen); ■ gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung); ■ keinen Erschütterungen ausgesetzt sein; ■ keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen; ■ in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitung n mit dem Modem bestehen; ■ mit einer geerdeten Wechselstromsteckdose ausgerüstet sein; ■ über ausreichend Platz verfügen, um Zugang zu den Netzkabeln zu gewährleisten, da der Stromanschluß des Produkts hauptsächlich über die Kabel unterbrochen wird.	Il sistema è progettato per funzionare in un ambiente di lavoro tipo. Scegliere una postazione che sia: ■ Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente). ■ Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta. ■ Al riparo da urti e lontana da fonti di vibrazione. ■ Isolata dai forti campi magnetici prodotti da dispositivi elettrici. ■ In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem. ■ Dotata di una presa a muro correttamente installata. ■ Dotata di spazio sufficiente ad accedere ai cavi di alimentazione, i quali rappresentano il mezzo principale di scollegamento del sistema.	El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar: ■ Limpio y libre de partículas en suspensión (salvo el polvo normal). ■ Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa. ■ Alejado de fuentes de vibración. ■ Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos. ■ En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltaje y desconectar el módem de las líneas de telecomunicación durante las tormentas. ■ Provisto de una toma de tierra correctamente instalada. ■ Provisto de espacio suficiente como para acceder a los cables de alimentación, ya que éstos hacen de medio principal de desconexión del sistema.

Regulatory compliance statements

Rack Mounting

If rack mounted units are installed in a closed or multi-unit rack assembly, they may require further evaluation by Certification Agencies. The following items must be considered:

- The ambient within the rack may be greater than room ambient. Installation should be such that the amount of airflow required for safe operation is not compromised. The maximum temperature for the equipment in this environment is 50C, unless otherwise specified in the environmental specifications for the equipment. Consideration should be given to the maximum rated ambient.
- Installation should be such that a hazardous stability condition is not achieved due to uneven loading.

Input supply:

Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurtrent protection and supply wiring.

Grounding:

Reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit.

American users

FCC Part 15

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.
- Use only shielded cables to connect peripherals to the system.

Accessories: This equipment has been tested and found to comply with the limits of a Class A digital device. The accessories associated with this equipment are: shielded video cable. These accessories are required to be used in order to ensure compliance with FCC rules.

FCC Part 68 (applicable to products fitted with USA modems)

Your modem complies with Part 68 of the Federal Communications Commission (FCC) rules. On the computer or modem card is a label that contains the FCC registration number and Ringer Equivalence Number (REN) for this device. If requested, this information must be provided to the telephone company.

An FCC compliant telephone line cord with a modular plug is required for use with this device. The modem is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. Excessive REN's on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total REN's, contact the local telephone company.

If this device causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. The telephone company may request that you disconnect the equipment until the problem is resolved.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of this equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

This equipment cannot be used on telephone company provided coin service. Connection to party line service is subject to state tariffs. Contact the state public utility commission or public service commission for information.

When programming or making test calls to emergency numbers:

▪ Remain on the line and briefly explain to the dispatcher the reason for the call.

▪ Perform such activities in the off-peak hours such as early morning or late evenings.

The United States Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. Refer to your fax communication software documentation for details on how to comply with the fax-branding requirement.

Canadian users

ICES-003

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

DOC Notice (for products fitted with an IC-compliant modem)

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

> **Warning**
>
> To avoid electrical shock or equipment malfunction you should not attempt to make electrical ground connections by yourself, but should contact the appropriate inspection authority or an electrician, as appropriate.

The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

European users

European directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 89/336/EEC amending directive 92/31/EEC & 93/68/EEC as per
  - EN 55022:1995 Class A
  - EN 55024:1998 according to

    EN 61000-3-2:1995

    EN 61000-3-3:1995

    EN 61000-4-2:1995

    EN 61000-4-3, ENV 50204

    EN 61000-4-4:1995

- Low Voltage Directive (Safety) 73/23/EEC as per EN 60950: 1992(A1/A2/A3/A4/A11)

European Telecommunication Information (for products fitted with EU approved modems)

Marking by the symbol $C\,\epsilon\,****\,X$ indicates compliance of this equipment to the Telecom Terminal Equipment and Satellite Earth Stations Directive 98/13/EEC. Such marking is indicative that this equipment meets or exceeds the following technical standards:

CTR 21 (1998) - Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting voice telephony services) in which network addressing, if provided, is by means of Dual Tone Multi Frequency (DTMF) signaling.

Caution ⚠	Although this equipment can use either loop disconnect (Pulse) or DTMF (Tone) signaling, only the performance of the DTMF signaling is subject to regulatory requirements for correct operation. It is therefore strongly recommended that the equipment is set to use DTMF signaling for access to public or private emergency services. DTMF signaling also provides faster call set up.

This equipment has been approved to Council Decision 98/482/EEC--"CTR 21" for Pan-European single terminal connection to the Public Switched Telephone Network (PSTN). However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN termination point. In the event of problems, you should contact Gateway customer support.

Japanese users

VCCI statement

This equipment is in the Class A category (Information Technology Equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment aimed at preventing radio interference in such residential area. When used near a radio or TV receiver, it may become the cause of radio interference. Read instructions for correct handling.

　この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準
に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波
妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ず
るよう要求されることがあります。

Australia and New Zealand users

EMI statement

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Australian Communications Authority and Radio Spectrum Management Agency.

New Zealand Telecommunication statement (for products fitted with Telepermit approved modems)

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment shall not be set up to make automatic calls to the Telecom '111' Emergency Service

Important	Under power failure conditions, this telephone may not operate. Please ensure that a separate telephone, not dependent on local power, is available for emergency use.

Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

(a) There shall be no more than 10 calls to the same number within any 30 minute period for any single manual call initiation, and

(b) The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

The equipment shall be set to ensure that automatic calls to different numbers are spaced such that there is no less than 5 seconds between the end of one call attempt and the beginning of another.

The equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.

Laser safety statement

All Gateway systems equipped with CD and DVD drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing contact an authorized service location.

> **Warning**
>
> Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

Television antenna connectors protection (for systems fitted with TV/cable TV tuner cards)

External television antenna grounding

If an outside antenna or cable system is to be connected to your Gateway PC, make sure that the antenna or cable system is electrically grounded to provide some protection against voltage surges and built up static charges.

Article 810 of the National Electrical Code, ANSI/NFPSA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Lightning protection

For added protection of any Gateway product during a lightning storm or when it is left unattended or unused for long periods of time, unplug the product from the wall outlet and disconnect the antenna or cable system.

Power lines

Do not locate the antenna near overhead light or power circuits, or where it could fall into such power lines or circuits. When installing or re-aligning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.

> **Warning**
>
> When installing or realigning an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits. Contact with them could be fatal.
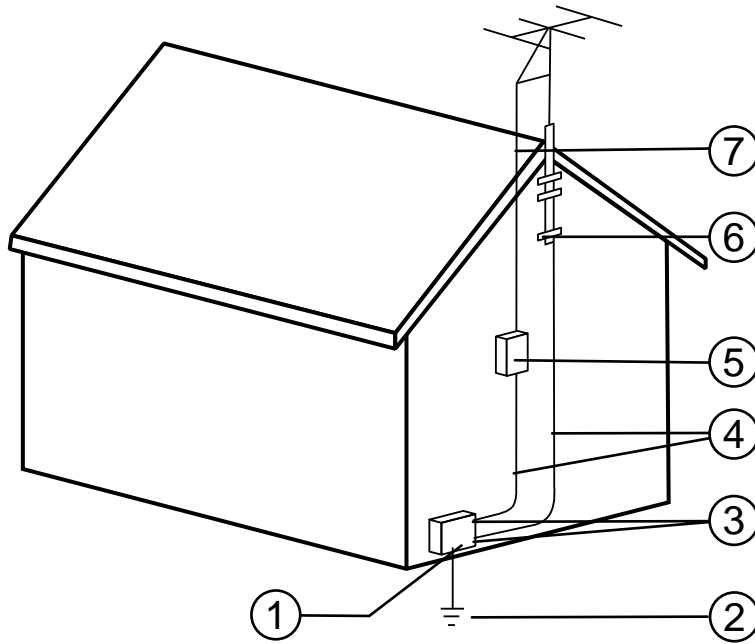
Antenna and satellite grounding

Reference	Grounding component
1	Electric service equipment
2	Power service grounding electrode system (NEC Art 250, Part H)
3	Ground clamps
4	Grounding conductors (NEC Section 810-21)
5	Antenna discharge unit (NEC Section 810-20)
6	Ground clamp
7	Antenna lead-in wire

Notices

System Specifications

B

The following specifications are for the standard configuration. The server may contain optional equipment. All specifications are subject to change.

Case size	18.9 in. (480 mm) x 24.1 in. (612 mm) x 3.46 in. (88 mm)
Processors	As many as two Intel® Pentium III™ processors operating at 600 MHz and faster
Cache	256K on processor
RAM	Four DIMM sockets support up to 2.0 GB of PC/100 SDRAM
BIOS	Flash BIOS for easy updates from diskette
IDE interfaces	Two PCI IDE controllers support as many as two ATAPI/IDE devices each (hard drives or CDs) for a total of as many as four IDE devices. (The chassis supports only the slimline CD drive.)
Diskette drive interface	Diskette drive controller is integrated on the system board
I/O ports	One parallel port, two serial ports, two USB ports, one PS/2 keyboard port, one PS/2 mouse port, one RJ-45 network port
Power supply	275 W power supply
SCSI interfaces	Integrated Adaptec AIC 7896 SCSI controller
Network interface	Intel 82559 PCI ethernet controller
Server management	Monitoring, alerting, and logging of critical system information obtained from embedded sensors on the system board, including thermal levels, voltage levels, fan speeds, and chassis intrusion monitoring.
Expansion slots	Two 32-bit, 33 MHz PCI slots on the riser card
Drive Bays	One slimline CD drive bay, one external 3.5-inch drive bay (occupied by diskette drive), and four hot-plug bays (at least one is occupied by a 1-inch high hot-plug drive).

Environmental specifications

The following specifications identify maximum environmental conditions. At no time should the server run under conditions which violate these specifications.

Temperature, operating	5° to 35° Celsius or
	44° to 95° Fahrenheit.
Humidity, operating	20% to 80%
Altitude	-200 feet to 10,000 feet
Voltage, AC input	90 to 135 VAC, 180 to 255 VAC
Frequency	47 to 63 Hz
Certification	FCC Class A, UL, CUL, CAN/CSA STD C22.2 No. 950, CE Mark, VCCI Class A, CB scheme

System I/O addresses

The following table shows the location in I/O space of all directly I/O-accessible registers.

Address	Resource
0000h - 000Fh	DMA Controller 1
0010h - 001Fh	DMA Controller 1
0020h - 0021h	Interrupt Controller 1
0022h - 0023h	
0024h - 0025h	Interrupt Controller 1
0026h - 0027h	
0028h - 0029h	Interrupt Controller 1
002Ah - 002Bh	
002Ch - 002Dh	Interrupt Controller 1
002Eh - 002Fh	Super I/O Index and Data Ports
0030h - 0031h	Interrupt Controller 1
0032h - 0033h	
0034h - 0035h	Interrupt Controller 1
0036h - 0037h	
0038h - 0039h	Interrupt Controller 1
003Ah - 003Bh	
003Ch - 003Dh	Interrupt Controller 1

Address	Resource
003Eh - 003Fh	
0040h - 0043h	Programmable Timers
0044h - 004Fh	
0050h - 0053h	Programmable Timers
0054h - 005Fh	
0060h, 0064h	Keyboard Controller
0061h	NMI Status and Control Register
0063h	NMI Status and Control Register
0065h	NMI Status and Control Register
0067h	NMI Status and Control Register
0070h	NMI Mask (bit 7) and RTC Address (bits 6::0)
0072h	NMI Mask (bit 7) and RTC Address (bits 6::0)
0074h	NMI Mask (bit 7) and RTC Address (bits 6::0)
0076h	NMI Mask (bit 7) and RTC Address (bits 6::0)
0071h	RTC Data
0073h	RTC Data
0075h	RTC Data
0077h	RTC Data
0080h - 008Fh	DMA Low Page Register
0090h - 0091h	DMA Low Page Register
0092h	System Control Port A (PC-AT control Port)
0093h - 009Fh	DMA Low Page Register
0094h	Video Display Controller
00A0h - 00A1h	Interrupt Controller 2
00A4h - 00A15	Interrupt Controller 2
00A8h - 00A19	Interrupt Controller 2
00Ach - 00Adh	Interrupt Controller 2
00B0h - 00B1h	Interrupt Controller 2
00B2h	Advanced Power Management Control
00B3h	Advanced Power Management Status
00B4h - 00B5h	Interrupt Controller 2
00B8h - 00B9h	Interrupt Controller 2
00BCh - 00BDh	Interrupt Controller 2
00C0h - 00DFh	DMA Controller 2
00F0h	Clear NPX error
00F8h - 00FFh	x87 Numeric Coprocessor

Address	Resource
0102h	Video Display Controller
0170h - 0177h	Secondary Fixed Disk Controller (IDE)
01F0h - 01F7h	Primary Fixed Disk Controller (IDE)
0200h - 0207h	Game I/O Port
0220h - 022Fh	Serial Port A
0238h - 023Fh	Serial Port B
0278h - 027Fh	Parallel Port 3
02E8h - 02Efh	Serial Port B
02F8h - 02FFh	Serial Port B
0338h - 033Fh	Serial Port B
0370h - 0375h	Secondary Diskette
0376h	Secondary IDE
0377h	Secondary IDE/Diskette
0378h - 037Fh	Parallel Port 2
03B4h - 03Bah	Monochrome Display Port
03BCh - 03BFh	Parallel Port 1 (Primary)
03C0h - 03CFh	Video Display Controller
03D4h - 03DAh	Color Graphics Controller
03E8h - 03EFh	Serial Port A
03F0h - 03F5h	Diskette Controller
03F6h - 03F7h	Primary IDE - Sec. Diskette
03F8h - 03FFh	Serial Port A (Primary)
0400h - 043Fh	DMA Controller 1, Extended Mode Registers
04D0h - 04D1h	Interrupt Controllers 1 and 2 Control Register
0678h - 067Ah	Parallel Port (ECP)
0778h - 077Ah	Parallel Port (ECP)
07BCh - 07BEh	Parallel Port (ECP)
0CA0 - CA3h	BMC Registers
0CF8h	PCI CONFIG_ADDRESS Register
0CF9h	NBX Turbo and Reset control
0CFCh	PCI CONFIG_DATA Register
46E8h	Video Display Controller

Memory map

Address Range (hex)	Amount	Function
0 to 07FFFFh	640 KB	DOS region, base system memory
0A0000h to 0BFFFFh	128 KB	Video or SMM memory
0C0000h and 0DFFFFh	128 KB	Expansion card BIOS and buffer area
0F0000h to 0FFFFFh	128 KB	System BIOS
0E0000h to 0EFFFFh	64 KB	Extended system BIOS
FC000000h to FFFFFFFFh	64 MB	PCI memory space

Interrupts

The following table suggests a logical interrupt mapping of interrupt sources. It reflects a typical configuration, but you can change these interrupts. Use the information to determine how to program each interrupt. The actual interrupt map is defined using configuration registers in the I/O controller. I/O Redirection Registers in the I/O APIC are provided for each interrupt signal. The signals define hardware interrupt signal characteristics for APIC messages sent to local APIC(s).

Important	If you disable either IDE controller to free the interrupt for that controller, you must physically unplug the IDE cable from the system board. Simply disabling the drive by configuring the SSU option does not make the interrupt available.

Interrupt	I/O APIC Level	Description
INTR	INT0	Processor interrupt
NMI	N/A	NMI from PIC to processor
IRQ1	INT1	Keyboard interrupt
Cascade	INT2	Interrupt signal from second 8259
IRQ3	INT3	Serial port A or B interrupt from SIO device (you can configure either)
IRQ4	INT4	Serial port A or B interrupt from SIO device (you can configure either)
IRQ5	INT5	Parallel port II

Interrupt	I/O APIC Level	Description
IRQ6	INT6	Diskette port
IRQ7	INT7	Parallel port
IRQ8_L	INT8	RTC interrupt
IRQ9	INT9	Signal control interrupt (SCI) used by ACPI-compliant operating system
IRQ10	INT10	
IRQ11	INT11	
IRQ12	INT12	Mouse interrupt
IRQ13	INT13	Co-processor interrupt
IRQ14	INT14	Compatibility IDE interrupt from primary channel IDE devices 0 and 1
IRQ15	INT15	
SMI_L		System management interrupt - general purpose indicator sourced through the PID to the processors

DMA usage

The following table lists the direct memory access (DMA) channels that the system typically uses and which ones are available for use by add-in devices.

DMA	Resource
0	Cascade
1	Available
2	Floppy Controller
3	Available
4	Redirect Cascade
5	Available
6	Available
7	Available

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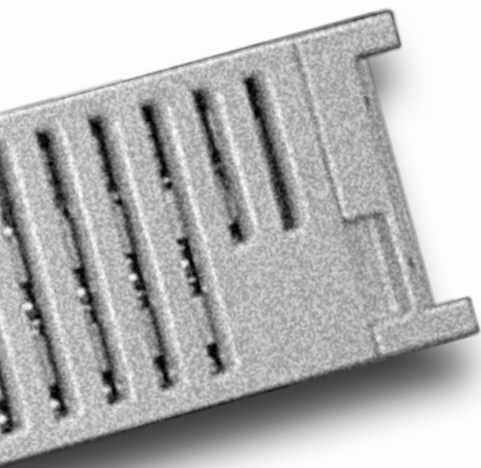SCSI drives 89
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